

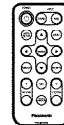
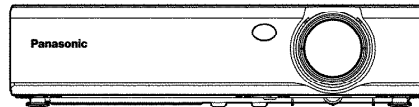
**ORDER NO. VED0404352C0**

**D10**

# Service Manual

**LCD Projector**

**PT-LB10NTU / PT-LB10NTE / PT-LB10U / PT-LB10E / PT-LB10VU / PT-LB10VE / PT-LB10SU / PT-LB10SE**



## **SPECIFICATIONS**

The service technician is required to read and follow the "Safety Precautions" and "Important Safety Notice" in this service manual.

## Specifications

**Power supply:** 100 V - 240 V AC, 50 Hz / 60 Hz

**Power consumption:**

220 W [During standby (when fan is stopped):  
Approx. 6 W]

**Amps:** 2.5 A - 1.0 A

**LCD panel:**

Panel size (diagonal): 0.7 type (17.78 mm)  
Aspect ratio: 4:3  
Micro lens array: Available  
Display method: 3 transparent LCD panels (RGB)  
Drive method: Active matrix method  
Pixels:  
PT-LB10NTU/E, LB10U/E, LB10VU/E:  
786 432 (1 024 × 768) × 3 panels  
PT-LB10SU/E: 480 000 (800 × 600) × 3 panels

**Lens:**

Manual zoom (1 - 1.2) / Manual focus  
PT-LB10NTU/E, LB10U/E, LB10SU/E:  
F 1.7 - 1.9, f 21.5 mm - 25.8 mm  
PT-LB10VU/E:  
F 2.0 - 2.3, f 22.0 mm - 26.2 mm

**Lamp:** UHM lamp (155 W)

**Luminosity:**

PT-LB10NTU/E, LB10U/E, LB10SU/E: 2 000 lm  
PT-LB10VU/E: 1 600 lm

**Scanning frequency (for RGB signals):**

Horizontal scanning frequency: 15 kHz - 91 kHz  
Vertical scanning frequency: 50 Hz - 85 Hz  
Dot clock frequency: 100 MHz or less

**YPbPr signals:**

480i, 480p, 576i, 576p, 1 080/60i, 1 080/50i, 720/60p

**Color system:**

7 (NTSC / NTSC 4.43 / PAL / PAL-M / PAL-N / PAL60 / SECAM)

**Projection size:** 838.2 mm - 7 620 mm

**Throw distance:**

PT-LB10NTU/E, LB10U/E, LB10SU/E: 1.1 m - 10.7 m  
PT-LB10VU/E: 1.1 m - 11.0 m

**Optical axis shift:** 6:1 (fixed)

**Screen aspect ratio:** 4:3

**Installation:**

Front / Rear / Ceiling / Desk (Menu selection method)

**Speakers:** 4.0 cm × 3.0 cm oval × 1

**Max. useable volume output:**

1 W (monaural)

**Connectors:**

**RGB IN / OUT:** Dual-line, one for input and one for output  
D-SUB HD 15-pin (female)

During YPbPr input/output:

Y: 1.0 V [p-p], 75 Ω

PbPr: 0.7 V [p-p], 75 Ω

During RGB input/output:

RGB: 0.7 V [p-p], 75 Ω

G.SYNC: 1.0 V [p-p], 75 Ω

HD / SYNC: TTL, automatic positive/negative polarity compatible

VD: TTL, automatic positive/negative polarity compatible

**VIDEO IN:** Single-line, RCA pin jack

1.0 V [p-p], 75 Ω

**S-VIDEO IN:** Single-line, Mini DIN 4-pin

Y 1.0 V [p-p], C 0.286 V [p-p], 75 Ω,

**AUDIO IN:** Single Line, RCA pin jack × 2 (L-R)  
0.5 V [rms]

**SERIAL:** DIN 8-pin RS-232C compatible

**Cabinet:**

Molded plastic (PC/ABS)

**Dimensions:**

Width: 297 mm

Height: 73 mm

Length: 210 mm (without lens cover)

**Weight:**

PT-LB10NTU/E: 2.2 kg

PT-LB10U/E, LB10VU/E, LB10SU/E: 2.1 kg

**Operating environment:**

Temperature: 0° C - 40° C

(when FAN CONTROL is set to "HIGH" 0° C - 35° C)

Humidity: 20 % - 80 % (no condensation)

**Certifications:**

PT-LB10NTU/LB10U/LB10VU/LB10SU:

UL60950, C-UL, FCC Class B

PT-LB10NTE/LB10E/LB10VE/LB10SE:

EN60950, EN55022, EN61000-3-2,

EN61000-3-3, EN55024

<Remote control unit>

**Power supply:**

3 V DC (Lithium CR2025 battery × 1)

**Operating range:**

Approx. 7 m

(when operated directly in front of signal receptor)

**Dimensions:** Width: 40 mm

Height: 86 mm

Length: 6.5 mm

**Weight:** 18 g (including battery)

**Accessories:**

**Card Remote control unit (TNQE239):** 1

**Lithium battery for remote control unit (CR2025):** 1

**Power cord:**

PT-LB10NTU/LB10U/LB10VU/LB10SU:

K2CG3DR00005 1

PT-LB10NTE/LB10E/LB10VE/LB10SE:

K2CT3DR00005 (U.K.) 1

K2CM3DR00002 (continental) 1

**RGB signal cable [K1HA15DA0002 (1.8 m)]:** 1

**CD-ROM (TQBH9005) (LB10NTU/E only)** 1

**Wireless Card (N5HBD0000028) (LB10NTU only)** 1

(N5HBD0000029) (LB10NTE only) 1

(N5HBD0000031) (for Spain) 1

(N5HBD0000030) (for Singapore) 1

(N5HBD0000028) (for Malaysia) 1

**Hexagon wrench (TKLA0701) (LB10NTU/E only)** 1

**Carrying bag (TPEP013):** 1

**Options:**

**Ceiling bracket:** ET-PKC80

**Wireless remote control unit:** ET-RM300

**Serial adapter (DIN 8-pin/D-sub 9-pin):** ET-ADSER

**Wireless card (for PT-LB10NTU/E):**

ET-CDWL3U/ET-CDWL2U (for North America)

ET-CDWL3E/ET-CDWL2E

(for U.K., Continental Europe except Spain)

ET-CDWL3ES/ET-CDWL2ES (for Spain)

ET-CDWL3SG/ET-CDWL2SG (for Singapore)

ET-CDWL3U/ET-CDWL2U (for Malaysia)

• Specifications are subject to change without notice.

• Weight and dimensions shown are approximate.

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## ⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

## Please refer to the Operating Instructions

PT-LB10NTU/U/VU/SU

# Panasonic

### Trademark Acknowledgements

- VGA and XGA are trademarks of International Business Machines Corporation.
  - Macintosh is a registered trademark of Apple Computer, Inc.
  - S-VGA is a registered trademark of the Video Electronics Standards Association.
- All other trademarks are the property of the various trademark owners.

#### CAUTION

##### Lithium Battery

**Risk of explosion if battery is replaced by an incorrect type. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.**  
(See also Operating Instructions.)

#### Precaution

If using of this projector at high elevations (above 1 400 m), set FAN CONTROL to HIGH. (Refer to "Option settings" in Operating Instructions.)

Failure to observe this may cause malfunctions.

Never use this projector at an elevation of 2 700 m or higher.

Using this projector at high elevations, consult your dealer or Authorized Service Center about preparations.

#### About lead free solder (PbF)

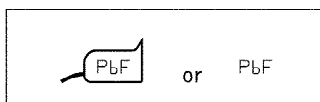
This projector is using the P.C.Board which applies lead free solder. The use of lead free solder is recommended from the standpoint of antipollution for the global environment in service.

Notes:

- Lead free solder: Sn-Ag-Cu (tin, silver and copper) has a higher melting point (approx. 217°C) than standard solder. Typically, the melting point is 30°C to 40°C higher. When servicing, use a high temperature soldering iron with temperature limitation function and set it to 370±10°C.
- Be precautions about lead free solder: Sn-Ag-Cu (tin, silver and copper) will tend to splash when heated too high (approx. 600°C or higher).
- Use lead free solder for the P.C.Board (specified on it as "PbF") which uses lead free solder. (When you unavoidably use lead solder, use lead solder after removing lead free solder. Or be sure to heat the lead free solder until it melts completely, before applying lead solder.)
- After soldering to double layered P.C.Boards, check the component side for excess solder which may flow onto the opposite side.

About the identification of the lead free solder P.C.Board

For the P.C.Board which applies lead free solder, the symbol as shown in the figure below is printed or stamped on the surface or the back of P.C.Board.



For US

### IMPORTANT SAFETY NOTICE

There are special parts used in Panasonic LCD Projectors which are important for safety. These parts are shaded on the schematic diagram. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of PANASONIC BROADCAST & TELEVISION SYSTEMS COMPANY.

#### WARNING:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**CAUTION:** Any unauthorized changes or modifications to this equipment will void the users authority to operate.

# 1. Safety Precautions

## 1.1. General Guidelines

- For continued safety, no modification of any circuit must be attempted.
- Unplug the power cord from the power outlet before disassembling this projector.
- It is advisable to use an isolation transformer in the AC power line before the service.
- Observe the original lead dress during the service. If a short circuit is found, replace all the parts overheated or damaged by the short circuit.
- After the service, all the protective devices such as insulation barriers, insulation papers, shields, and isolation R-C combinations must be properly installed.
- After the service, check the leakage current to prevent the customer from getting an electric shock.

## 1.2. Leakage Current Check

1. Prepare the measuring circuit as shown in Fig.1.

Be sure to use a voltmeter having the performance described in Table 1.

Fig. 1

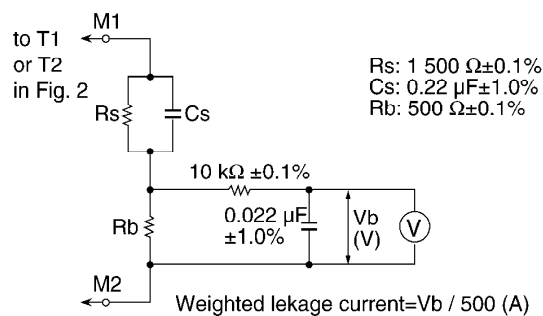
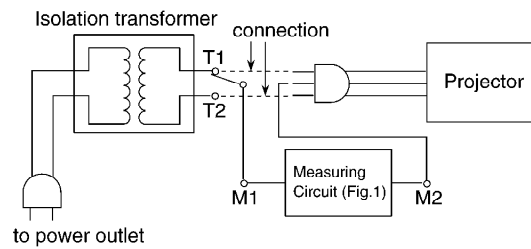


Table 1

	Performance
Voltmeter (rms reading)	Accuracy: $\leq 2\%$ Input resistance: $\geq 1\,\text{M}\Omega$ Input capacitance: $\leq 200\,\text{pF}$ Frequency range: 15 Hz to 1 MHz

Fig. 2



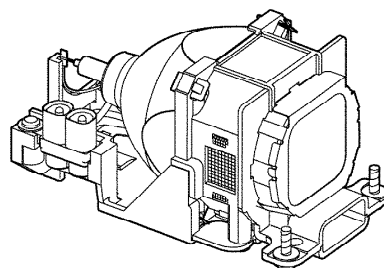


2. Assemble the circuit as shown in Fig. 2. Plug the power cord in a power outlet.
3. Connect M1 to T1 according to Fig. 2 and measure the voltage.
4. Change the connection of M1 from T1 to T2 and measure the voltage again.
5. The voltmeter must read 0.375 V or lower in both of steps 3 and 4. This means that the current must be 0.75 mA or less.
6. If the reading is out of the above standard, the projector must be repaired and rechecked before returning to the customer because of a possibility of an electric shock.

### 1.3. UV Precaution and UHM Lamp Precautions

- Be sure to unplug the power cord from the power outlet when replacing the lamp.
- Because the lamp reaches a very high temperature during its operation, wait until it cools completely when replacing the Lamp Unit.
- The lamp emits small amounts of UV-radiation, avoid direct-eye contact with the light.
- Because the high pressure lamp involves a risk of explosion, never touch the lamp wire lead during the service. (See Fig. 3)

Fig.3



## 2. Ext Option

This projector has EXT OPTION in addition to standard on-screen menus.

- There are SELF CHECK and SERVICE MODE for service, etc.

### 2.1. Procedure to enter EXT OPTION

1. Press "MENU" button on the main unit or remote control unit to display "MENU" screen, then select "OPTION1" and press "ENTER" button.
2. Select "OSD" on "OPTION1" menu and press "ENTER" button 3 seconds or longer.  
MENU → OPTION1 → OSD

### 2.2. EXT OPTION Menu and Functions

#### EXT OPTION

FREEZE MSG	OFF / ON
ANGLE RESET	OFF / ON
FAN FULLMODE	OFF / ON
AUTO SETUP	STANDARD / SPECIAL
SELF CHECK	
SERVICE MODE	
FLICKER ADJ	

#### - FREEZE MSG

Switching ON/OFF "FREEZE" on-screen display

#### - ANGLE RESET

Switching ON/OFF "AUTO KEYSTN (Automatic Keystone)" reference level setting

Note:

- Normally, do not select. (Angle reset data will be rewritten.)

#### - FAN FULLMODE

Setting the cooling fan motor rotation speed

- Switching ON "FAN FULLMODE", the rotation level of the fan becomes high-speed rotation (fixed). Moreover, when "FAN FULLMODE" is ON, changing "FAN CONTROL" in OPTION2 becomes impossible (setting FAN FULLMODE is given priority

more than FAN CONTROL).

- **AUTOSETUP**

Setting AUTO SETUP mode

- **STANDARD:** To set the normal mode (the dot clock is adjusted strictly))
- **SPECIAL:** To set the special mode (the dot clock is adjusted roughly)

Note:

- Do not change the initial setting (STANDARD).

- **SELF CHECK**

To enter the self-check mode

- **SERVICE MODE**

To enter the service mode

- **FLICKER ADJ**

To enter the flicker adjustment mode

### **2.3. Canceling EXT OPTION**

Press "MENU" button on the main unit or remote control unit.

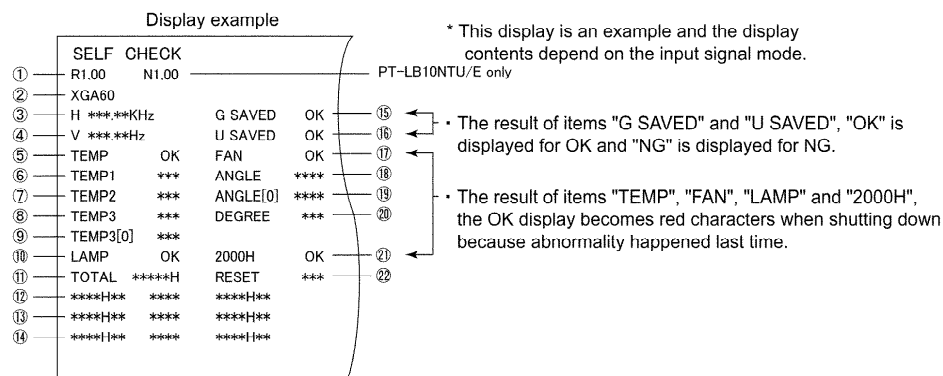
## **3. Self-Check Mode**

This mode is used to narrow down the location of the failure.

### **3.1. Procedure to enter the self-check mode**

Select "SELF CHECK" on "EXT OPTION" menu and press "ENTER" button on the main unit or remote control unit.

### **3.2. Self Check Display and Contents**



	Display Contents	Remarks
①	Microcomputer Version Display	Software Version
②	Resolution Name	Different display according to the input signal
③	Horizontal Signal Frequency	RGB or YPbPr signal reception only
④	Vertical Signal Frequency	
⑤	Temperature Abnormality Check	Cause of Lamp Malfanction
⑥	Thermosensor 1 Measurement Value *1	Around Air Outlet (A/D conversion value: 0 - 255)
⑦	Thermosensor 2 Measurement Value *1	Around Air Inlet (A/D conversion value: 0 - 255)
⑧	Thermosensor 3 Measurement Value	Around Tilt Sensor (A/D conversion value: 0 - 1 023)
⑨	Thermosensor 3 Reference Value	Thermosensor 3 A/D Conversion Value (0 - 1 023) at angle reset
⑩	Lamp - Abnormality Check	Cause of Lamp Malfanction
⑪	Total Usage Time	Projector Cumulative Usage Time
⑫	Lamp ON - Cumulative Usage Time / Frequency / Cumulative Usage Time	Current
⑬		Second
⑭		First
⑮	Gamma Correction Data Check	It is distinguished whether gamma data is stored in the flash ROM.
⑯	Color Unevenness Correction Data Check	It is distinguished whether color unevenness correction data is stored in the flash ROM.
⑰	Fan Stop Check	Cause of Lamp Malfanction
⑱	Tilt Sensor Measurement Value	Voltage Value (0.00 - 3.30)
⑲	Tilt Sensor Reference Value	Tilt Sensor Voltage Value (0.00 - 3.30) at angle reset
⑳	Tilt Degree *2	Degree of tilt of the projector, that is a value by which temperature correction is given to the tilt sensor A/D conversion value. (When automatic keystone, the keystone distortion is corrected with this value.)
㉑	Lamp - Judgment for Cumulative Usage more than 2 000 h *3	Judgment for Replacement Time of Lamp
㉒	Lamp - Reset Frequency of Cumulative Usage Time	Reset Frequency (0 - 255)

\*1 When detected abnormal temperature (high temperature around the air inlet and/or outlet ports, large difference between temperature around the air inlet/outlet ports), TEMP indicator turned on. If arriving at the critical temperature, the power supply will be shutdown automatically and the indicator will flash.

\*2 When "AUTO KEYSTN (Automatic Keystone)" is set to ON, the keystone distortion is corrected automatically with this value during automatic setup.

\*3 Warning of the lamp cumulative usage time and shutdown use the conversion time for 155 W.

### 3.3. Canceling the self-check mode

Press "MENU" button on the main unit or remote control unit.

## 4. Service Mode

This mode is used to display seven kinds of test patterns [Horizontal lines, Vertical lines, Dots, Crosshatch, White cross, Black cross and White (No pattern)] in the four colors (White, Red, Green and Blue)..

**Note:**

- On the service mode, displays above patterns by each color without test equipment such as PC or SG. Use the service mode for simplified adjustments by your eyes and so on.

#### 4.1. Procedure to enter the service mode

Select "SERVICE MODE" on "EXT OPTION" menu and press "ENTER" button on the main unit or remote control unit.

Note:

- In the service mode, pressing the up-arrow "▲" or down-arrow "▼" button allows the test pattern selection and the left-arrow "◀" or right-arrow "▶" button the color selection (White / Red / Green / Blue).

#### 4.2. Canceling the service mode

Press "MENU" button on the main unit or remote control unit.

### 5. Flicker Adjustment Mode

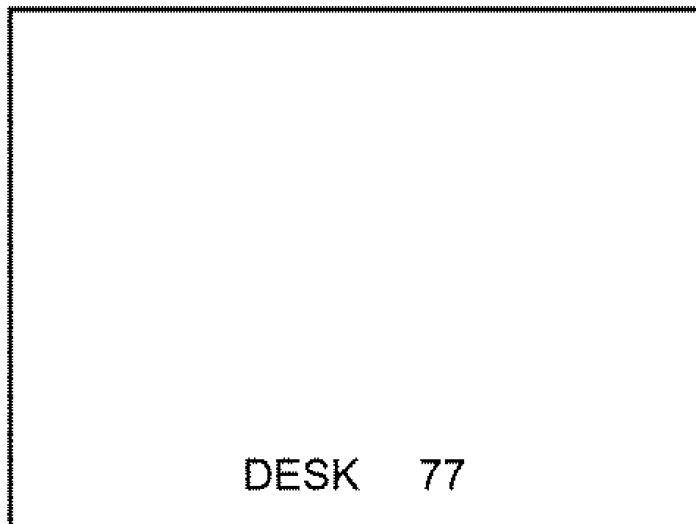
If replacing the optical parts (Analysis / LCD / Lens block) of this projector and/or A-P.C.Board (assembly), enter the flicker adjustment mode and minimize the flicker.

#### 5.1. Procedure to enter the adjustment mode

Select "FLICKER ADJ" on "EXT OPTION" menu and press "ENTER" button on the main unit or remote control unit.

Note:

"DESK setting (blue)" is displayed when entering the adjustment mode.



Adjustment Display when DESK setting

#### 5.2. Adjustment Display and Contents

- Setting value is increased and decreased with the right-arrow "►" and left-arrow "◄" buttons.  
"◄": Decrease, "►": Increase
- Adjust the setting value to minimize the flicker on the screen.
- Execute the adjustment by 6 patterns below.
- The pattern (adjustment display) is switched with the up-arrow "▲" and down-arrow "▼" buttons.  
"▲": Forward direction, "▼": Reverse direction
- There are 6 patterns of "DESK setting (blue)", "DESK setting (red)", "DESK setting (green)", "CEILING setting (blue)", "CEILING setting (red)" and "CEILING setting (green)".
- The setting value is saved into this projector when the pattern is switched.

### 5.3. Canceling the flicker adjustment mode

Press "MENU" button on the main unit or remote control unit.

**Note:**

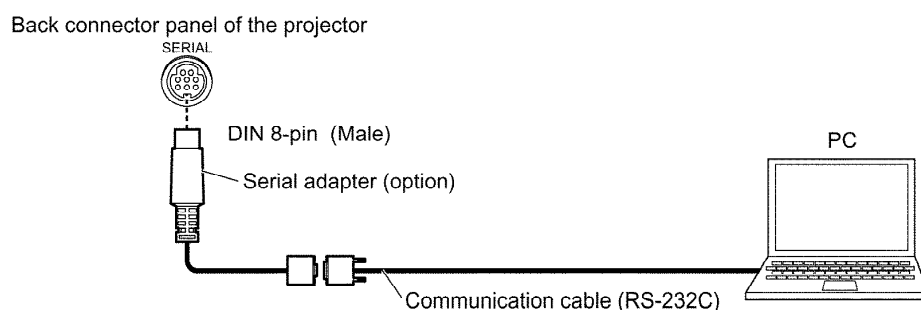
When "MENU" button is pressed, the setting value at that time is saved into this projector and the adjustment mode is canceled.

## 6. Using the SERIAL Connector

The serial connector which is on the back connector panel of the projector conforms to RS-232C standard. This projector can be controlled by a PC which is connected as shown in "6.1. Connection".

For controlling this projector by a PC, requires communication software on the market, and inputs control commands according to communication settings and basic format below.

### 6.1. Connection

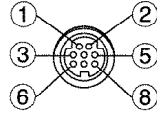


**Note:**

Use a proper communication cable which is suitable for the PC to connect the optional serial adapter, which is connected with SERIAL connector of this projector, and the PC.

## 6.2. Pin Layout and Signal Names for SERIAL Connector

DIN 8-pin (female)  
seen from outside



Pin No	Signal Name	Contents
3	RXD	Receive data
4	GND	Ground
5	TXD	Transmit data
1	---	Connected internally
2	---	
6	---	
7	---	NC
8	---	NC

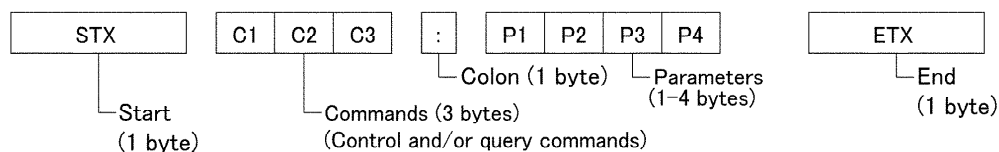
## 6.3. Communication Settings

Signal Level	Contents		Description
Sync. method	Conforms to RS-232C standard	Asynchronous	Synchronizes every 1 character (bits)
Baud rate		9 600 bps	Data transfer speed
Parity		None	Error detection method
Character length		8 bits	Number of bit composing 1 character
Stop bit		1 bit	Uses stop bit when asynchronous method
X parameter		Not used	
S parameter		Not used	

## 6.4. Basic Format

The data sent from the PC to the projector is transmitted in the format shown below.





#### Notes:

- If sending multiple commands, check that a call back has been received from the projector for 1 command before sending the next command.
- When a command which does not require parameters is sent, the colon (:) is not required.

## 6.5. Control / Query Commands

### Control Commands

Command Name (Parameter format is shown in <>)	Function / Contents	Call back from Projector (Parameter format is shown in <>)	Minimum Value of Parameter	Maximum Value of Parameter
PON *1	POWER ON	PON	—	—
POF *1	POWER OFF	POF	—	—
AVL :<pl>	VOLUME	AVL :<pl>	0	63
IIS :<input signal>	INPUT SELECT	IIS :<input signal>	—	—
OST	STANDARD	OST	—	—
OFZ :<off_on>	FREEZE	OFZ :<off_on>	0	1
OEN :	ENTER	OEN	—	—
VPM :<picture mode>	PICTURE MODE	VPM :<picture mode>	—	—
<NAT>	NATURAL	<NAT>	—	—
<STD>	STANDARD	<STD>	—	—
<DYN>	DYNAMIC	<DYN>	—	—
<BBD>*2	BLACK-BD	<BBD>	—	—
AUU	VOLUME UP	AUU	—	—
AUD	VOLUME DOWN	AUD	—	—
OMN	MENU	OMN	—	—
OCU	CURSOR UP	OCU	—	—
OCD	CURSOR DOWN	OCD	—	—
OCL	CURSOR LEFT	OCL	—	—
OCR	CURSOR RIGHT	OCR	—	—
OAS	AUTO SETUP	OAS	—	—
OSH *1	SHUTTER	OSH	—	—
OIX	INDEX WINDOW (Double)	OIX	—	—
DZU	D.ZOOM UP	DZU	—	—
DZD	D.ZOOM DOWN	DZD	—	—
OLP :<lamp power> *1 *3	LAMP POWER	OLP :<lamp power>	0	1

\*1 Do not transmit the PON, POF, OSH and/or OLP commands continuously in a short time.

The lamp may be damaged and/or cause malfunctions.

\*2 The BBD parameter is non-correspondence to PT-LB10VU/E.

\*3 The OLP command is invalid at a no signal.

### Query Commands

Query Command	Contents	Call back from Projector (Parameter format is shown in < >)
QPW	POWER CONDITION	<power condition>
QIN	INPUT SIGNAL	<input signal>
QAV	VOLUME LEVEL	<pl>
QVC	COLOR LEVEL	<pl>
QVT	TINT LEVEL	<pl>
QVB	BRIGHT LEVEL	<pl>
QVR	CONTRAST LEVEL	<pl>
QVS	SHARPNESS LEVEL	<pl>
QWR	WHITE BALANCE LEVEL (RED)	<pl>
QWG	WHITE BALANCE LEVEL (GREEN)	<pl>
QWB	WHITE BALANCE LEVEL (BLUE)	<pl>
QHP	H-POSITION LEVEL	<pl>
QVP	V-POSITION LEVEL	<pl>
QCP	COLOR PHASE LEVEL	<pl>
QDC	DOT CLOCK LEVEL	<pl>
QSP	INSTALLATION	<installation>
QLG	LANGUAGE	<language>
QPM	PICTURE MODE	<(NAT) = NATURAL (STD) = STANDARD (DYN) = DYNAMIC (BBD) = BLACK-BD * <off_on>
QFZ	FREEZE	<off_on>
QLP	LAMP POWER	<lamp power>
QSL	LAMP ON TIME	<acctch>
QSH	SHUTTER	<off_on>
QKS	KEYSTONE	<pl>
QTE	COLOR TEMPERATURE	<color temp.>

\* The BBD parameter is non-correspondence to PT-LB10VU/E.

## Parameters

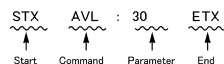
Parameter Format	Parameter Size (Byte)	Parameter Definition
<pl>	3 (provided that approves of 1 byte or 2 bytes when control)	Decimal notation without plus/minus sign (0 to 999). Decimal notation with plus/minus sign (-99 to +99) (Returns 3 bytes call back from the projector. Decimal notation without plus/minus sign (000, 001, 002, ..., 999). Decimal notation with plus/minus sign (-99, -98, ..., -01, +00, +01, ..., +99)
<off_on>	1	0=OFF, 1=ON
<input signal>	3	VID=VIDEO, SVD=S-VIDEO, RG1=RGB1, NWP=NETWORK (PT-LB10NTU/E only)
<installation>	1	0=FRONT/DESK, 1=REAR/DESK, 2=FRONT/CEILING, 3=REAR/CEILING
<language>	3	ENG=English, DEU=German, FRA=French, ESP=Spanish, ITA=Italian, JPN=Japanese, CHI=Chinese, KOR=Korean, RUS=Russian
<power condition>	3	000=Power OFF, 001=Power ON
<acctch>	4	Decimal notation without plus/minus sign: 0000 hour to 9999 hours
<lamp power>	1	0=LOW, 1=HIGH
<color temp.>	1	0=LOW, 1=STD, 2=HIGH

\* If an incorrect command is sent from the PC, the "ER401" command will be sent from the projector to the PC.

### [Example]

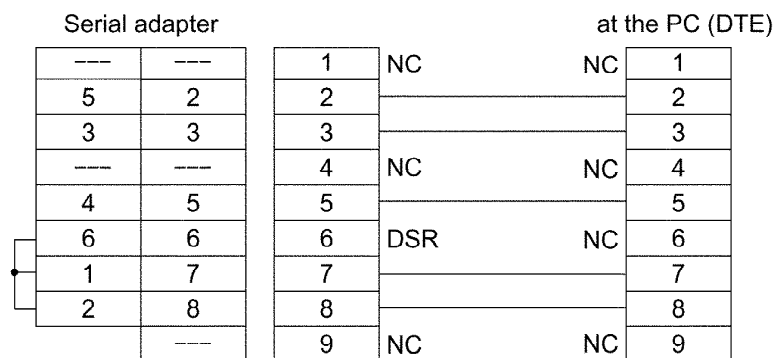
When controls the audio volume to +30 by a PC

(Sends commands as the following:)



- When a command which does not require parameters is sent, the colon (:) is not required.

## 6.6. Communication Cable Specifications



## 6.7. Signal Selector Connecting Cable Specifications

When connecting to a signal selector (ex. TW-SWS62J), use a cable with specifications below.  
Connecting method: Connects a video signal cable from the signal selector to "VIDEO IN", and an RGB signal cable to "RGB1 IN".

At the signal selector D-sub 9p (male)		At the serial adapter (DCE) D-sub 9p (male)		Serial adapter	
Signal Name	Pin No.	Pin No.	Signal Name	Pin No. (cable side)	Pin No. (projector side)
NC	1	1	NC	---	---
RD Receive data	2	2	SD Transmit data	2	5
SD Transmit data	3	3	RD Receive data	3	3
NC	4	4	NC	---	---
GND Ground	5	5	GND Ground	5	4
NC	6	6	DSR	6	6
RS Transmit request	7	7	CS Transmit permission	7	1
CS Transmit permission	8	8	RS Transmit request	8	2
NC	9	9	NC	---	---

**Note:**

Set VP control terminal switch of the signal selector to VP TYPE "B".

## 7. Disassembly Instructions

**Warning:**

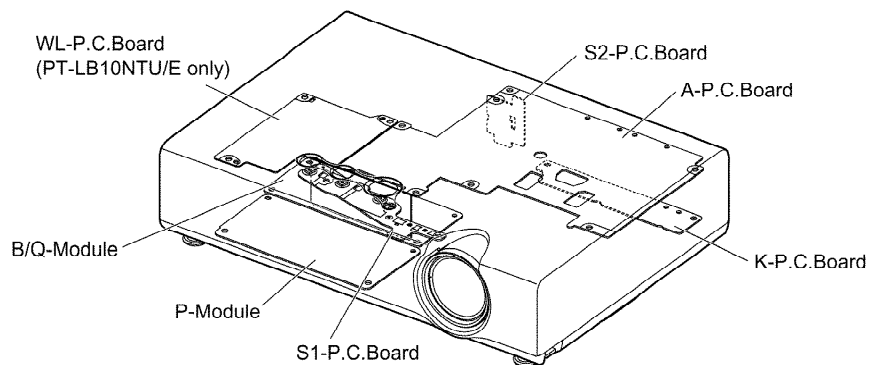
- Be sure to unplug the power cord from the power outlet before disassembling this projector.

**Caution:**

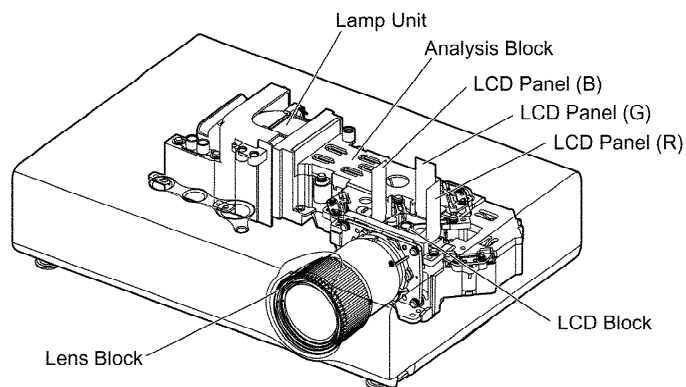
- While turning over a printed circuit board, be sure to put a insulating material under it to prevent a short circuit.
- Printed circuit boards and wires must not be pulled forcibly, but be handled carefully.
- Connectors also must be handled carefully.
- After repairing this projector, be sure to put back the wires and connectors to the original condition.

### 7.1. Printed Circuit Board and Main Parts Location

#### Electrical Parts



## Optical Parts



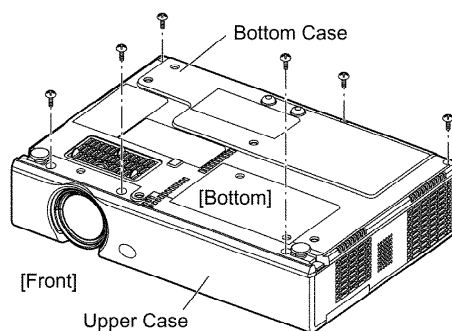
## 7.2. Removal of Upper Case

**Note.**

**- For PT-LB10NTU/E, remove a wireless card before disassembling.**

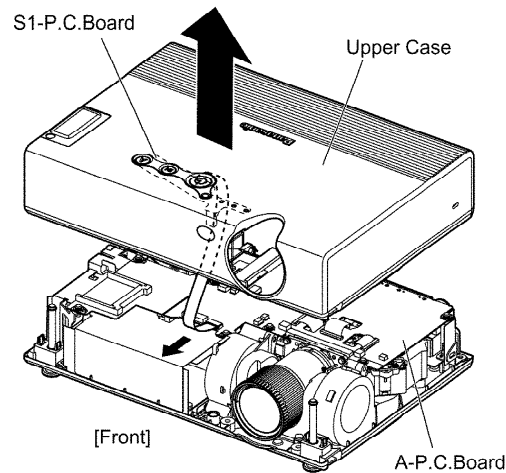
**1. Turn the projector upside down.**

**2. Unscrew the 6 screws.**



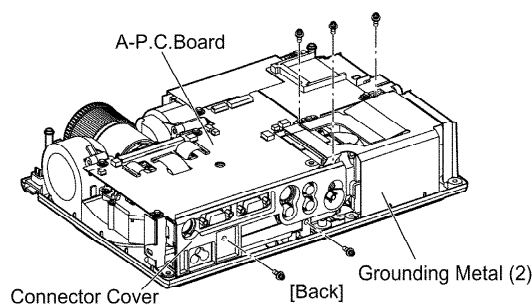
**3. Return the projector to the normal position.**

4. Lift the upper case upward (approx. 10 cm).
5. Disconnect the cable from S1-P.C.Board (connector A8 on A-P.C.Board) and remove the upper case.

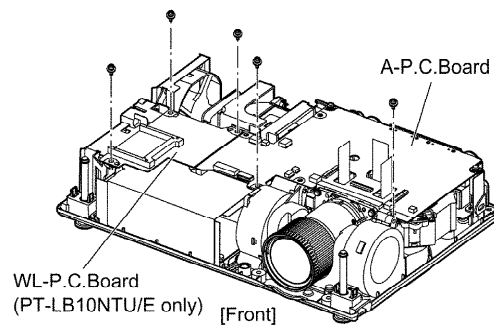


### 7.3. Removal of A-P.C.Board

1. Remove the upper case according to the section 7.2. "Removal of Upper Case".
2. Unscrew the 1 screw on the backside and remove the connector cover.
3. Unscrew the 1 screw fixing the connector metal fittings on the backside.
4. Unscrew the 3 screws and remove the grounding metal (2).



5. Disconnect the connectors from/to the A-P.C.Board.
6. Unscrew the screws (PT-LB10NTU/E: 5, Others: 2) and remove the A-P.C.Board block (PT-LB10NTU/E: with WL- and S2-P.C.Boards, Others: with S2-P.C.Board).

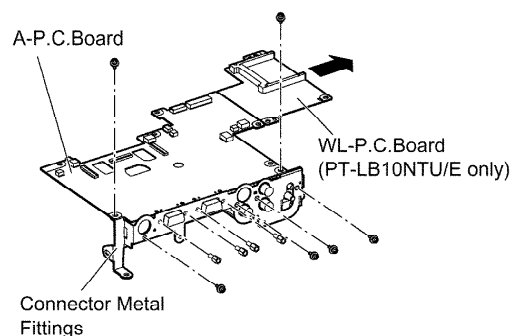


**7. While disconnecting the 2 connectors, remove the WL-P.C.Board from the A-P.C.Board block (PT-LB10NTU/E only).**

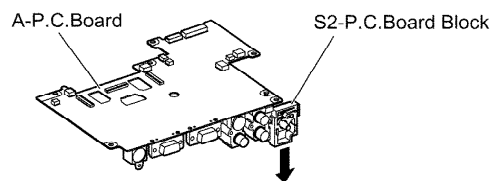
**8. Unscrew the 10 screws and remove the connector metal fittings.**

**Note:**

**- Because the S2-P.C.Board block is attached, work carefully when removing the connector metal fittings.**



**9. While disconnecting the connector between A- and S2-P.C.Boards, remove the S2-P.C.Board block.**



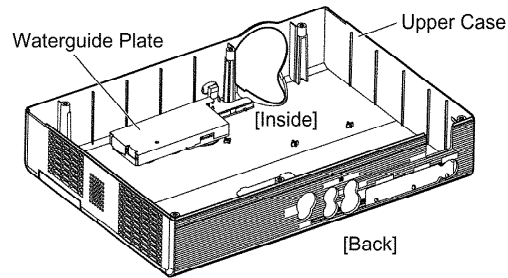
#### **7.4. Removal of WL-P.C.Board (PT-LB10NTU / E only)**

Remove the WL-P.C.Board according to the steps 1 through 6 in the section 7.3. "Removal of A-P.C.Board".

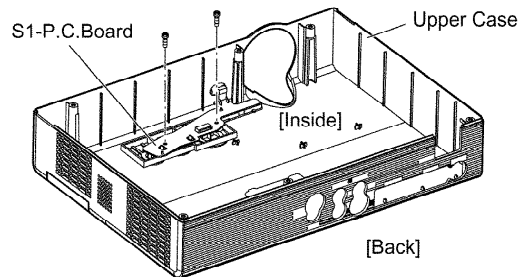
#### **7.5. Removal of S1-P.C.Board**

**1. Remove the upper case according to the section 7.2. "Removal of Upper Case".**

## 2. Remove the water guide plate.



## 3. Unscrew the 2 screws and remove the S1-P.C.Board.

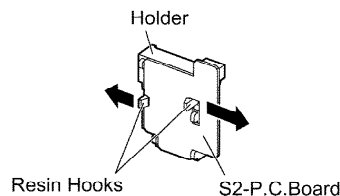


## 7.6. Removal of S2-P.C.Board

1. Remove the S2-P.C.Board block according to the section 7.3. "Removal of A-P.C.Board".
2. Remove the holder while expanding the resin hooks outside.

Note:

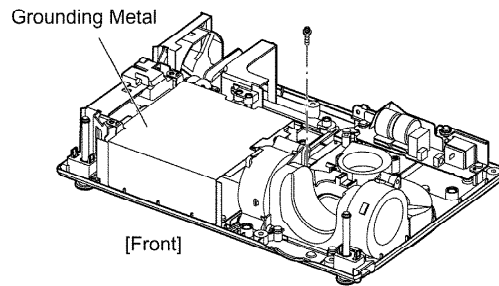
- Work carefully not to damage the resin hook.



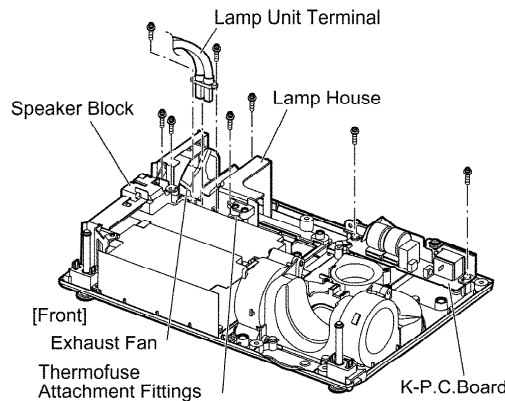
## 7.7. Removal of K-P.C.Board

1. Remove the analysis block, LCD block and lens according to the steps 1 through 3 in the section 7.11. "Removal of Analysis Block and Lens".
2. Unscrew the screws (PT-LB10NTU/E: 1, Others: 3) and remove the grounding metal.



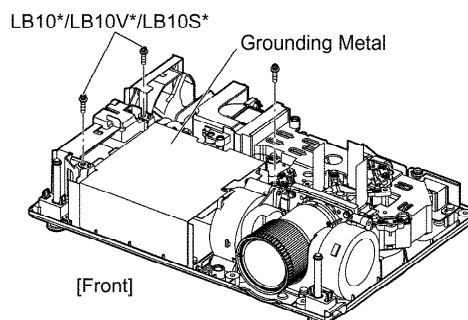


3. Unscrew the 2 screws and remove the lamp unit terminal.
4. Unscrew the 2 screws and remove the exhaust fan and speaker block.
5. Unscrew the 2 screws and remove the lamp house and thermofuse attachment fittings.
6. Unscrew the 2 screws and remove the K-P.C.Board.



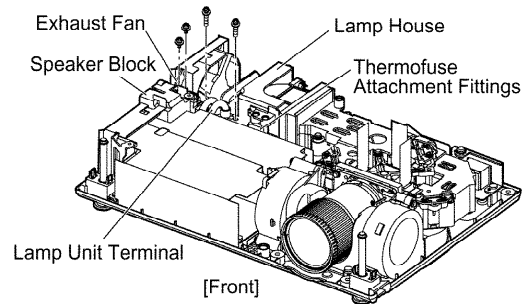
## 7.8. Removal of B / Q-Module

1. Remove the A-P.C.Board block according to the steps 1 through 6 in the section 7.3. "Removal of A-P.C.Board".
2. Unscrew the screws (PT-LB10NTU/E: 1, Others: 3) and remove the grounding metal.

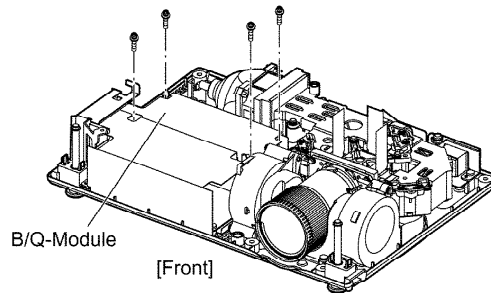


3. Unscrew the 2 screws and remove the lamp unit terminal.

4. Unscrew the 3 screws and remove the lamp house and thermofuse attachment fittings.
5. Unscrew the 1 screws and remove the exhaust fan and speaker block.

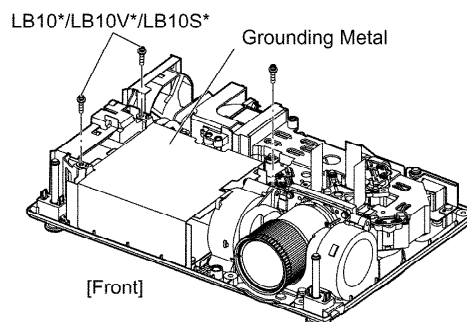


6. Unscrew the 4 screws and remove the B/Q-Module.

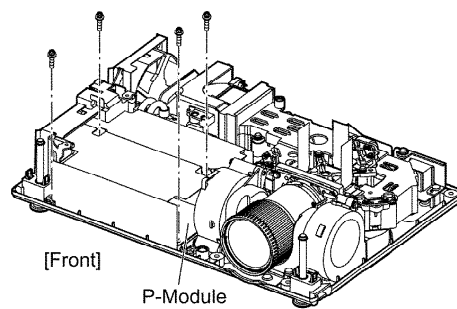


## 7.9. Removal of P-Module

1. Remove the A-P.C.Board block according to the steps 1 through 6 in the section 7.3. "Removal of A-P.C.Board".
2. Unscrew the screws (PT-LB10NTU/E: 1, Others: 3) and remove the grounding metal.

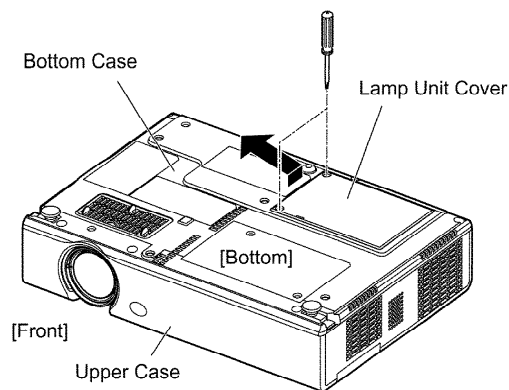


3. Unscrew the 4 screws and remove the P-Module.

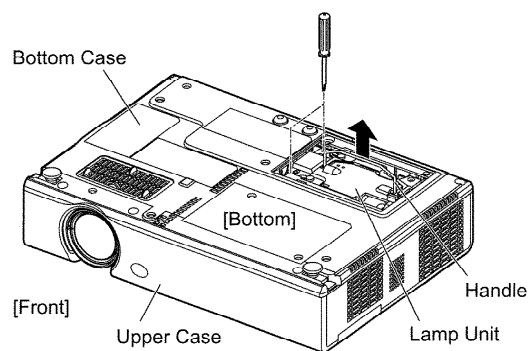


## 7.10. Removal of Lamp Unit

1. Turn the projector upside down.
2. Loosen the 2 screws until they idle, remove the lamp unit cover.

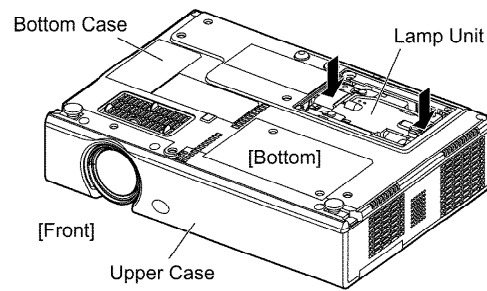


3. Loosen the 2 screws until they idle, remove the lamp unit with the handle.



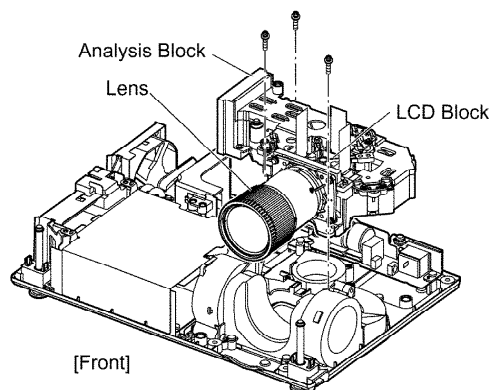
### Note:

- When installing the lamp unit (or a new one) in the main unit, place it in a specified position and press the connector side and the opposite side of the lamp unit (arrow positions shown in the figure below), and confirm the lamp unit is inserted securely. Then, tighten the 2 screws fixing the lamp unit, and attach the lamp unit cover.

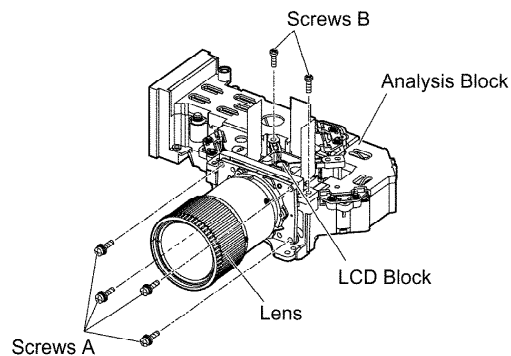


### 7.11. Removal of Analysis Block and Lens

1. Remove the lamp unit according to the section 7.10. "Removal of Lamp Unit".
2. Remove the A-P.C.Board block according to the steps 1 through 6 in the section 7.3. "Removal of A-P.C.Board".
3. Unscrew the 3 screws and remove the analysis block, LCD block and lens.



4. Unscrew the 4 screws A and remove the lens.
5. Unscrew the 2 screws B and remove the LCD block (the analysis block remains).

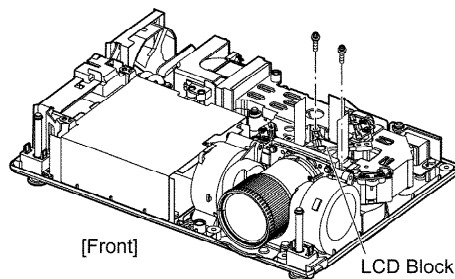


### 7.12. Removal of LCD Block

1. Remove the A-P.C.Board block according to the steps 1 through 6 in the section 7.3. "Removal of A-P.C.Board".
2. Unscrew the 2 screws and remove the LCD block.

Note:

- Be careful not to touch the surface of prism and LCD panel.



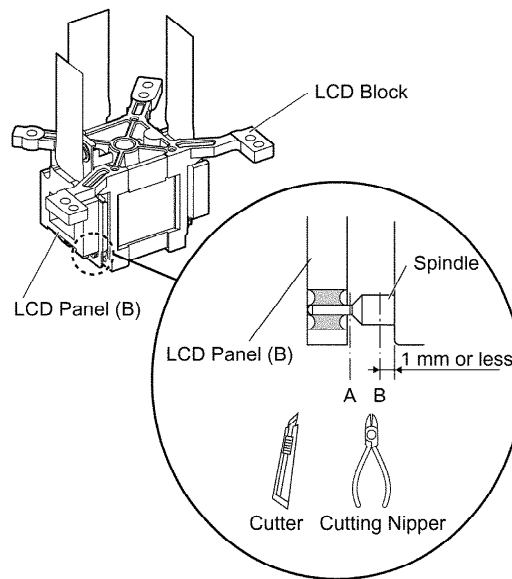
### 7.13. Replacement of LCD Panel

- The procedure is described as an example of LCD panel (B).

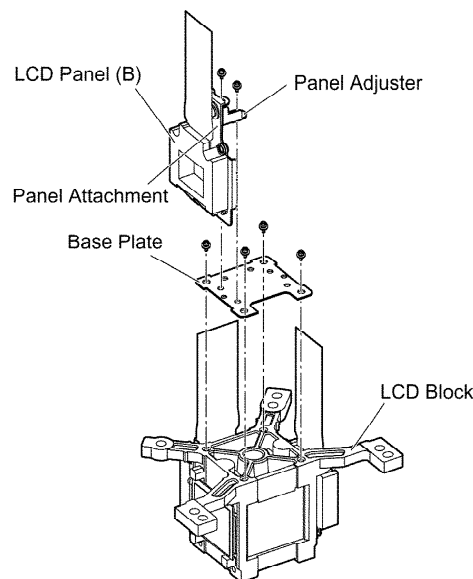
1. Remove the LCD block according to the section 7.12. "Removal of LCD Block".
2. Cut the 4 LCD panel installation spindles at the position A and remove the LCD panel.
3. Cut the 4 LCD panel installation spindles at the position B and remove them.

Notes:

- Work carefully not to apply external force around the spindle part by using a cutter, cutting nipper or the like for cutting the spindle.
- Adjust the height after the spindle is cut to 1 mm or less.



- 4. Attach the base plate with 4 screws.**
- 5. Tighten the 2 screws temporarily just until new LCD panel (with the panel attachment and panel adjuster) can be shifted by your fingers.**



- 6. Reassemble the projector in the reverse order of disassembling, but leave the upper case and the screws fixing the A-P.C.Board block as they are removed.**
- 7. Adjust the convergence according to the section 8.4. "Convergence Adjustment".**
- 8. After the adjustment, while paying attention not to vary the**

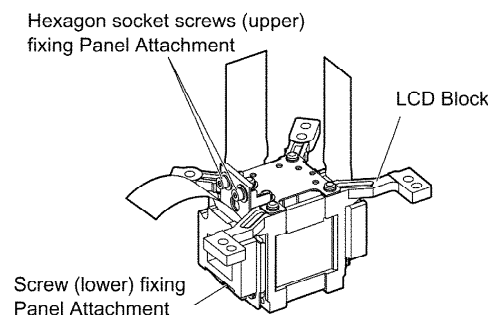
adjusting result, tighten the 2 screws (upper) fixing the panel attachment temporarily with a hexagon head wrench.

Notes:

- Prepare a hexagon head wrench processed short.
- Service tool (Part No. TZSH070010), hexagon head wrench processed short, is available.

9. Remove the LCD block again.

10. Tighten the 3 screws fixing the panel attachment.



Note:

- For PT-LB10NTU/E, the screw (lower) fixing the panel attachment holds the installation of the LCD panel concurrently.

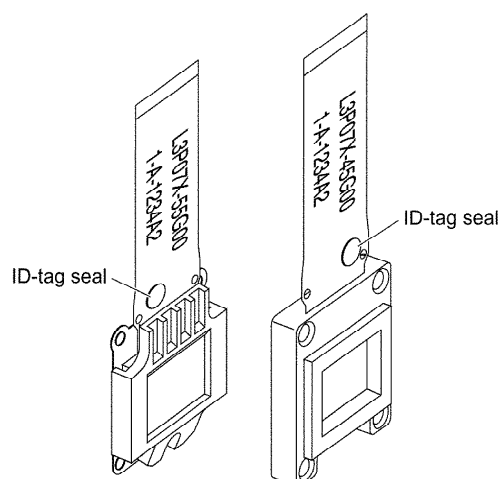
11. Reassemble the projector as it was.

#### 7.14. LCD Panel Discrimination

ID-tag seal color	LCD panel
Red	LCD panel (R)
Blue	LCD panel (B)
(No seal)	LCD panel (G)

- Since the ID-tag seal is pasted to the FPC of LCD Panel, (R), (G) or (B) can be easily identified by the color of the seal.
- Finally, identify the panel color by the part number printed on the FPC.





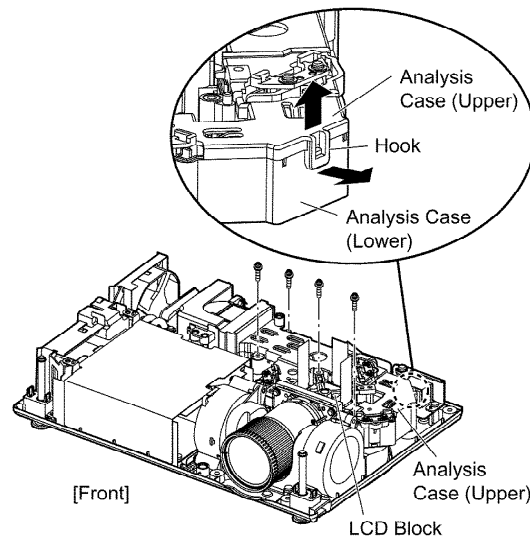
### 7.15. LCD Panel Combination

- Part number is printed on the FPC of LCD Panel.
- When replacing LCD Panel, use a component which has the same part number as the original.

Model number	LCD panel	Part No.
PT-LB10NTU/E / PT-LB10U/E	R	L5BDAXQ00143 / (L3P07X-55G00)
	G	L5BDAXQ00144 / (L3P07X-55G00)
	B	L5BDAXQ00145 / (L3P07X-55G00)
PT-LB10VU/E	R	L5BDAXQ00131 / (L3P07X-45G00)
	G	L5BDAXQ00132 / (L3P07X-45G00)
	B	L5BDAXQ00133 / (L3P07X-45G00)
PT-LB10SU/E	R	L5BDAXN00073 / (L03P07S-46G00)
	G	L5BDAXN00074 / (L03P07S-46G00)
	B	L5BDAXN00075 / (L03P07S-46G00)

### 7.16. Replacement of Incidence Polarizer

1. Remove the LCD block according to the section 7.12. "Removal of LCD Block".
2. Unscrew the 2 screws.
3. Remove the analysis case (upper) while expanding the hook of it outside.



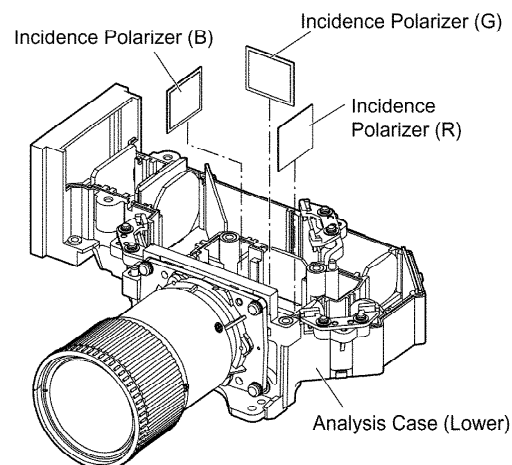
**Note:**

- Because the hook is damaged easily, be careful not to expand it excessively.

#### 4. Replace the incidence polarizer.

**Note:**

- Be careful not to touch the surface of incidence polarizer.



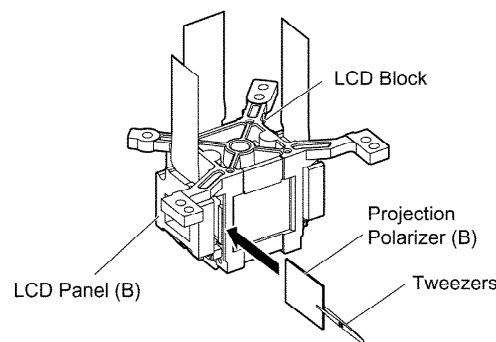
### 7.17. Replacement of Projection Polarizer

- The procedure is described as an example of projection polarizer (B).

1. Remove the LCD block according to the section 7.12. "Removal of LCD Block".
2. Remove the projection polarizer which requires replacing. (The projection polarizer is secured with adhesive tape.)

Notes:

- Be careful not to damage peripheral components (prism, LCD panel, etc.).
- Use tweezers.

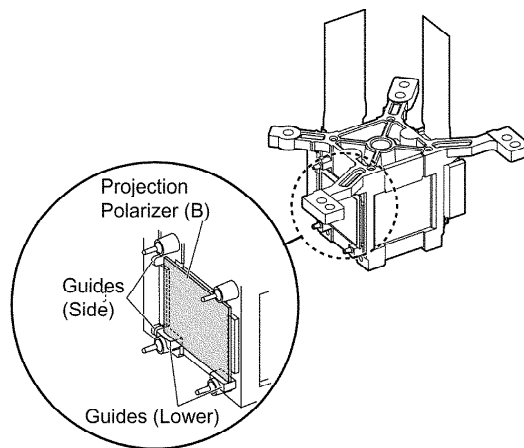


3. Install new projection polarizer.
  - A. Put adhesive tape on the projection polarizer.
  - B. Stick the projection polarizer on the specified position.

Notes:

- Align the projection polarizer with the guides (lower, side) of LCD block.
- Be careful not to touch the surface of projection polarizer.
- Use tweezers.

- C. Press the adhesive part and secure the projection polarizer.

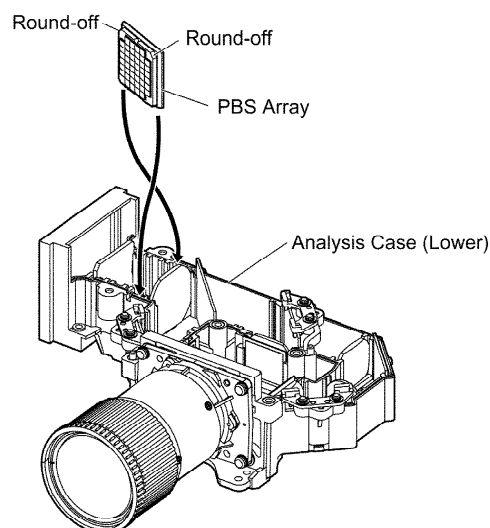


### 7.18. Replacement of PBS Array (Analysis Block)

1. Remove the analysis case (upper) according to the steps 1 through 3 in the section 7.16. "Removal of Incidence Polarizer".
2. Remove the PBS array.
3. Install new PBS array.

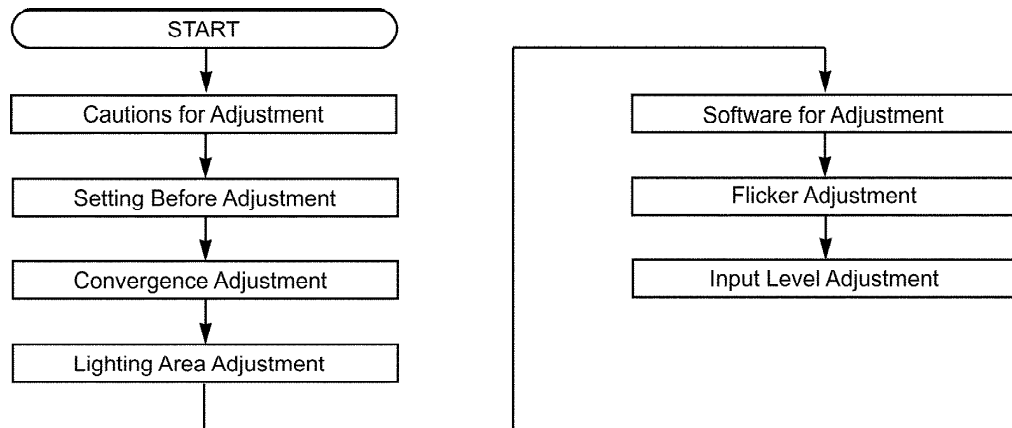
Note:

- Be careful not to mistake the direction (inside and outside, upper and lower).
- Be careful not to touch the surface of PBS array.



## 8. Measurement and Adjustments

### 8.1. Adjustment Procedure Flowchart

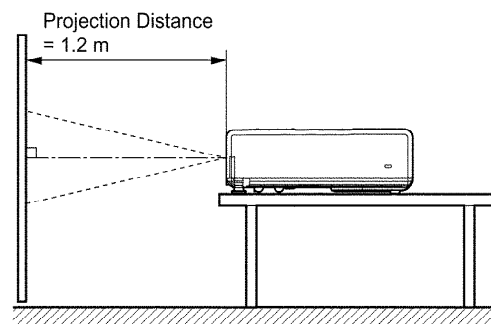


## 8.2. Cautions for Adjustment

- Never unplug the power cord until the power indicator on the projector illuminates red.
- To maintain and ensure safety, always use the designated components for replacement parts.
- If removing any clamps, lead wires or connectors, always place them back in their proper locations.
- Be careful not to damage the lead wires or components when using a soldering iron or similar tool.

## 8.3. Setting Before Adjustment

- Set up the projector to obtain the projection distance below.
- Turn the zoom ring of the projector to obtain the largest size of the picture.



## 8.4. Convergence Adjustment

Execute this adjustment when replacing the LCD panel .

### 8.4.1. Tools to be used

**Service Kit (Part No. TZSH07015):** This kit is composed of 3 extension flexible cables and 3 connector extension cables.

**Note:**

- Consult your dealer or Authorized Service Center for the service kit.

#### **8.4.2. Preparation**

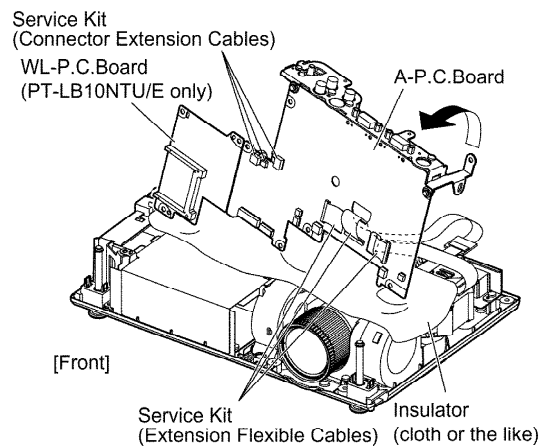
1. Loosen 2 screws fixing the panel adjuster and 3 screws fixing the panel attachment, then tighten the 5 screws temporarily just until the LCD panel can be shifted by your fingers.

**Note:**

- See figures in the section 7.13. "Replacement of LCD Panel" for 2 screws fixing the panel adjuster and 3 screws fixing the panel attachment.
2. Reassemble the projector in the reverse order of disassembling, but leave the upper case and the screws fixing the A-P.C.Board block as they are removed.
  3. Connect the service kit (extension cables).
    - Each flexible cable of LCD Panels (R/G/B) - Connectors (A1/A2/A3) on A-P.C.Board
    - Power fan connector - Connector (A16) on A-P.C.Board
    - Exhaust fan connector - Connector (A17) on A-P.C.Board
    - PBS fan connector - Connector (A19) on A-P.C.Board
  4. Covering with an insulator (cloth or the like) to prevent a short circuit, set the A-P.C.Board block on the main unit.

**Note:**

- Handle with care not to apply external force to connecting parts which connect the main unit and A-P.C.Board.



### 8.4.3. Adjustment Procedure

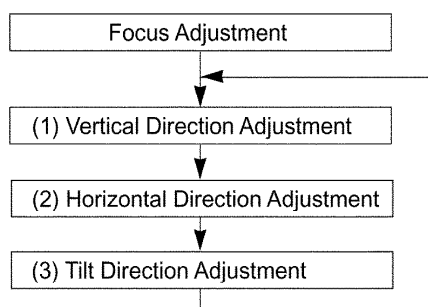
Prepare 2 pieces of thick black paper (23 mm × 100 mm) that can be shaded.

**- Cover and shade LCD panels with the paper except the panel for adjustment.**

#### 8.4.3.1. When replacing every LCD panel or LCD block

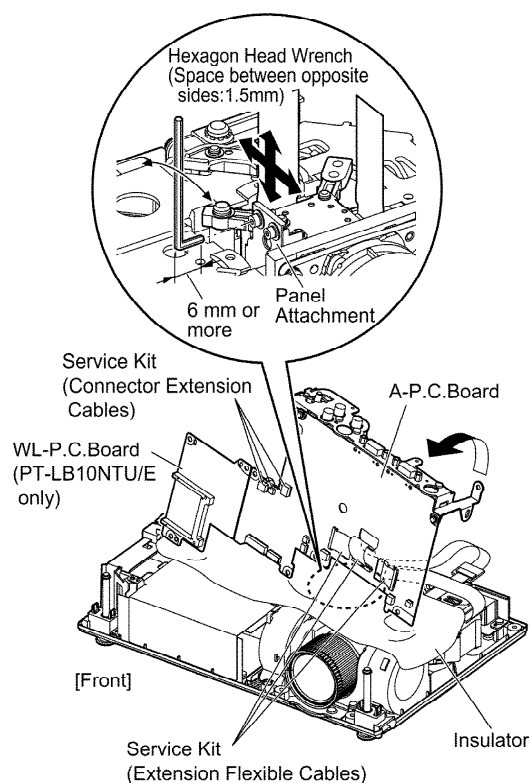
1. Display the green crosshatch pattern and adjust the lens focus.
2. Adjust focus by shifting the panel adjuster for LCD panel (G) back and forth, then tighten the 2 screws.
3. Display green and blue crosshatch patterns.
4. Adjust the LCD panel (B) position so that the vertical center of blue crosshatch pattern is overlapped with the vertical center of green crosshatch pattern.
5. Adjust the LCD panel (B) position so that the horizontal center of blue crosshatch pattern is overlapped with the horizontal center of green crosshatch pattern.
6. Correct the tilt of the blue crosshatch pattern by adjusting the LCD panel (B) position.
7. Adjust the LCD panel (R) position similarly.
8. Display green, red and blue crosshatch patterns and confirm the convergence. If it is necessary, fine adjust the convergence so that the red and/or blue crosshatch pattern is overlapped with green one.





Repeat steps (1) to (3) until the green and blue crosshatch patterns merge into a cyan pattern.

**9. After the adjustment, reassemble the projector according to the steps 8 through 11 in the section 7.13. "Replacement of LCD Panel".**



#### 8.4.3.2. When replacing single LCD panel (R, G or B)

- The procedure is described as an example when LCD panel (B) is replaced.

1. Display the green crosshatch pattern and adjust the lens focus.
2. Display green and blue crosshatch patterns.
3. Adjust focus by shifting the panel adjuster for LCD panel (B) back and forth, then tighten the 2 screws.

4. Adjust the LCD panel (B) position so that the vertical center of blue crosshatch pattern is overlapped with the vertical center of green crosshatch pattern.
5. Adjust the LCD panel (B) position so that the horizontal center of blue crosshatch pattern is overlapped with the horizontal center of green crosshatch pattern.
6. Correct the tilt of the blue crosshatch pattern by adjusting the LCD panel (B) position.
7. Display green, red and blue crosshatch patterns and confirm the convergence. If it is necessary, fine adjust the convergence so that the red and/or blue crosshatch pattern is overlapped with green one.

## 8.5. Lighting Area Adjustment

### 8.5.1. Tools to be used

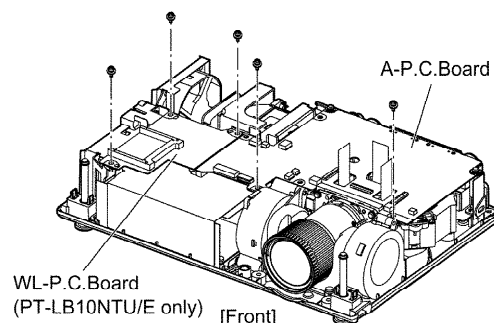
Service Kit (Part No. TZSH07015): This kit is composed of 3 extension flexible cables and 3 connector extension cables.

Note:

- Consult your dealer or Authorized Service Center for the service kit.

### 8.5.2. Preparation

1. Remove the connector panel and grounding metal (2) according to the steps 1 through 4 in the section 7.3. "Removal of A-P.C.Board".
2. Unscrew the screws (PT-LB10NTU/E: 5, Others: 2).



3. Connect the service kit (extension cables).

- Each flexible cable of LCD Panels (R/G/B) - Connectors (A1/A2

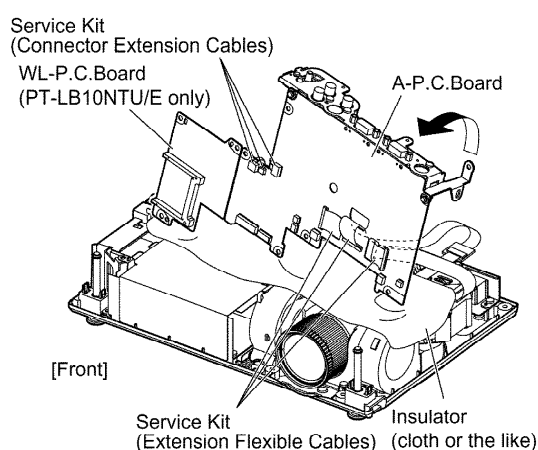
/A3) on A-P.C.Board

- Power fan connector - Connector (A16) on A-P.C.Board
- Exhaust fan connector - Connector (A17) on A-P.C.Board
- PBS fan connector - Connector (A19) on A-P.C.Board

4. Covering with an insulator (cloth or the like) to prevent a short circuit, set the A-P.C.Board block on the main unit.

Note:

- Handle with care not to apply external force to connecting parts which connect the main unit and A-P.C.Board.



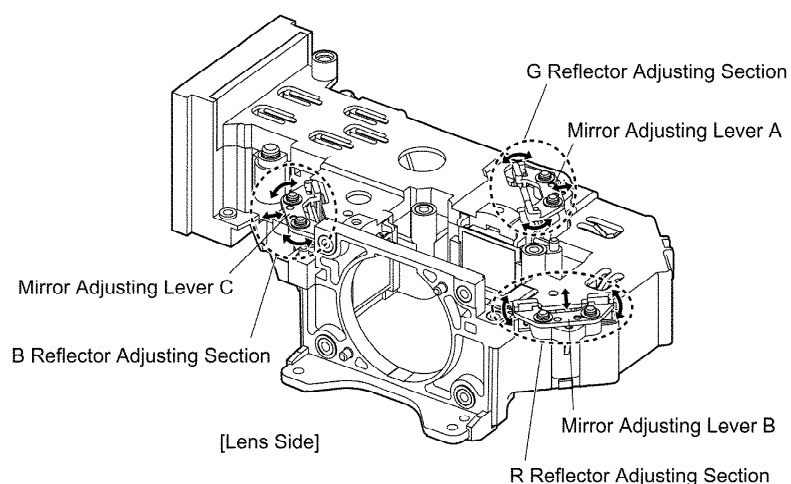
### 8.5.3. Adjustment Procedure

#### 8.5.3.1. Outline

When the lighting area is off from the adjustment and color unevenness appears, adjust the lighting area into correct position.

Symptom	Measure
Magenta unevenness	G Reflector Adjustment
Cyan unevenness	R Reflector Adjustment
Yellow unevenness	B Reflector Adjustment

- Shifting the mirror adjusting lever horizontally, adjust color unevenness on the screen upper/lower sides.
- Twisting the mirror adjusting lever, adjust color unevenness on the screen right/left sides.



[Above figure is shown only the analysis block for explanation.]

#### 8.5.3.2. G Reflector Adjustment

1. Turn on the power and display 100 % white pattern on the screen.
2. Loosen the 2 screws fixing the mirror adjusting lever A just until the lever can be shifted.
3. Adjust the mirror adjusting lever A position to minimize color unevenness on the screen by shifting the lever in arrow directions.
4. Tighten the 2 screws.

#### 8.5.3.3. R Reflector Adjustment

1. Turn on the power and display 100 % white pattern on the screen.
2. Loosen the 2 screws fixing the mirror adjusting lever B just until the lever can be shifted.
3. Adjust the mirror adjusting lever B position to minimize color unevenness on the screen by shifting the lever in arrow directions.
4. Tighten the 2 screws.

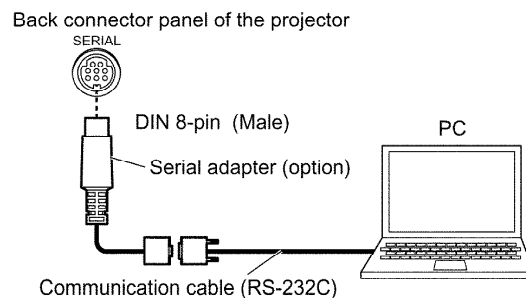
#### 8.5.3.4. B Reflector Adjustment

1. Turn on the power and display 100 % white pattern on the screen.
2. Loosen the 2 screws fixing the mirror adjusting lever C just until the lever can be shifted.
3. Adjust the mirror adjusting lever C position to minimize color unevenness on the screen by shifting the lever in arrow directions.
4. Tighten the 2 screws.

## 8.6. Software for Adjustment

### 8.6.1. Outline

- This projector needs computer-aided adjustments.
- After the software adjustments, this projector must be turned off and on again to memorize the settings.
- Connect the cable between the projector and a PC as shown below.
- Updating the software will change the version number.



### 8.6.2. Operating Procedure

1. Run software program by the keyboard entry.

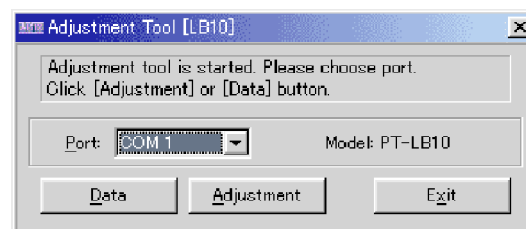
Note:

- Use the software program as below.

Adjustment Tool [LB10]

2. The first menu is Port selection menu.
3. Adjust the projector by selecting the necessary item from the menu in each stage.

### 8.6.3. Port Selection Menu



Select the applying item with the list box and click "Data" or "Adjustment".

#### 8.6.3.1. Explanation of Buttons

Port:

Port name of PC which connects with the projector

**Data:**

Displays the data transmission/reception menu.

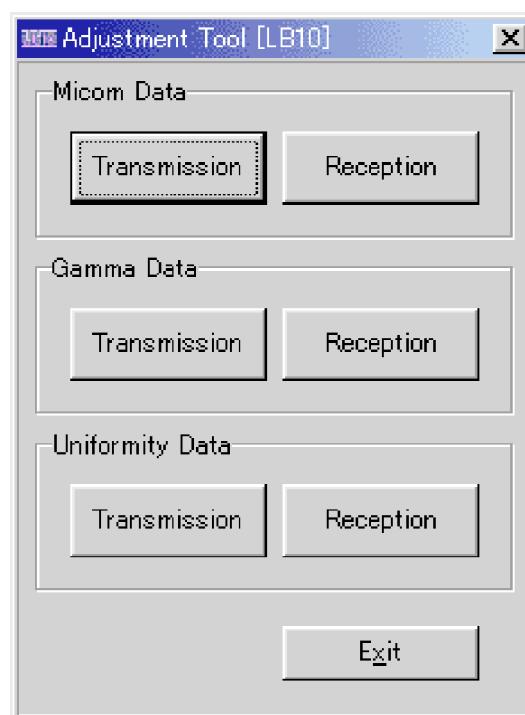
**Adjustment:**

Displays the adjustment menu.

**Exit:**

Exits this application.

#### 8.6.4. Data Transmission / Reception Menu



##### 8.6.4.1. Explanation of Buttons

**Micom Data Transmission:**

Reads the microcomputer data from the file and transmits it to the projector.

**Micom Data Reception:**

Receives the microcomputer data from the projector and writes it in the file.

**Gamma Data Transmission:**

Reads the gamma data from the file and transmits it to the projector.

**Gamma Data Reception:**

Receives the gamma data from the projector and writes it in the file.

**Uniformity Data Transmission:**

Reads the color unevenness correction data from the file and transmits it to the projector.

**Uniformity Data Reception:**

Receives the color unevenness correction data from the projector and writes it in the file.

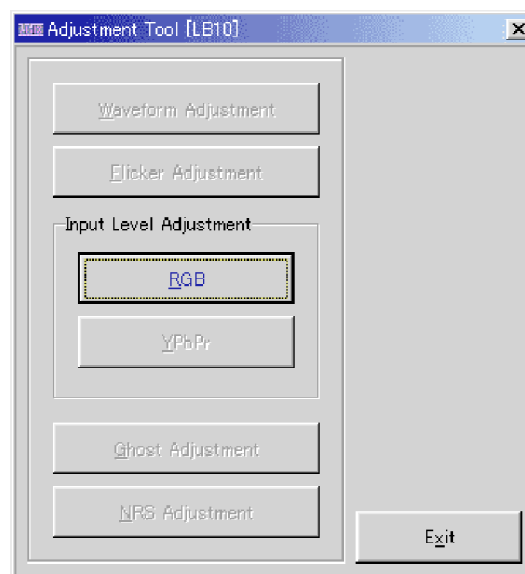
**Exit:**

Exits this application.

**8.6.4.2. Receiving and transmitting of the data**

Click a target button and specify a file name.

**8.6.5. Adjustment Menu**



**8.6.5.1. Explanation of Buttons**

**Input Level Adjustment RGB:**

Displays the RGB input level adjustment menu.

**Exit:**

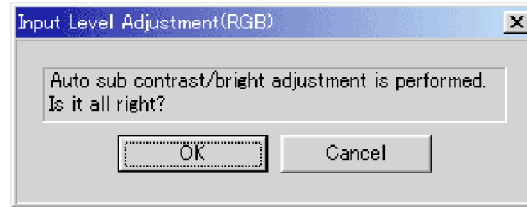
Exits this application.

**8.7. Flicker Adjustment**

According to the procedure of chapter 5 "Flicker Adjustment Mode", minimize the flicker.

## 8.8. Input Level Adjustment

### 8.8.1. Adjustment Menu



### 8.8.2. Explanation of Buttons

**OK:**

Executes automatic sub contrast and sub brightness adjustments, then closes this dialog.

**Cancel:**

Cancels this menu.

### 8.8.3. Equipment to be used

PC, RGB Signal Generator, Software for Adjustment

### 8.8.4. Adjustment Procedure

1. Display the input level adjustment [RGB] menu.
2. Input a window pattern signal to RGB IN connector.

**Note:**

- Use approx. 15 % window pattern as follows.
    - Black background (screen width) : White window width = 2 : 1
    - Black background (screen height) : White window height = 3 : 1
  - PT-LB10NTU/E, LB10U/E, LB10VU/E must use the window pattern of XGA (1 024 × 768).
  - PT-LB10SU/E must use the window pattern of S-VGA (800 × 600).
3. Click the OK button.

## 9. Troubleshooting



The letters in the left of the inspection items indicate the P.C.Boards or Modules related to their respective descriptions.

Note: 

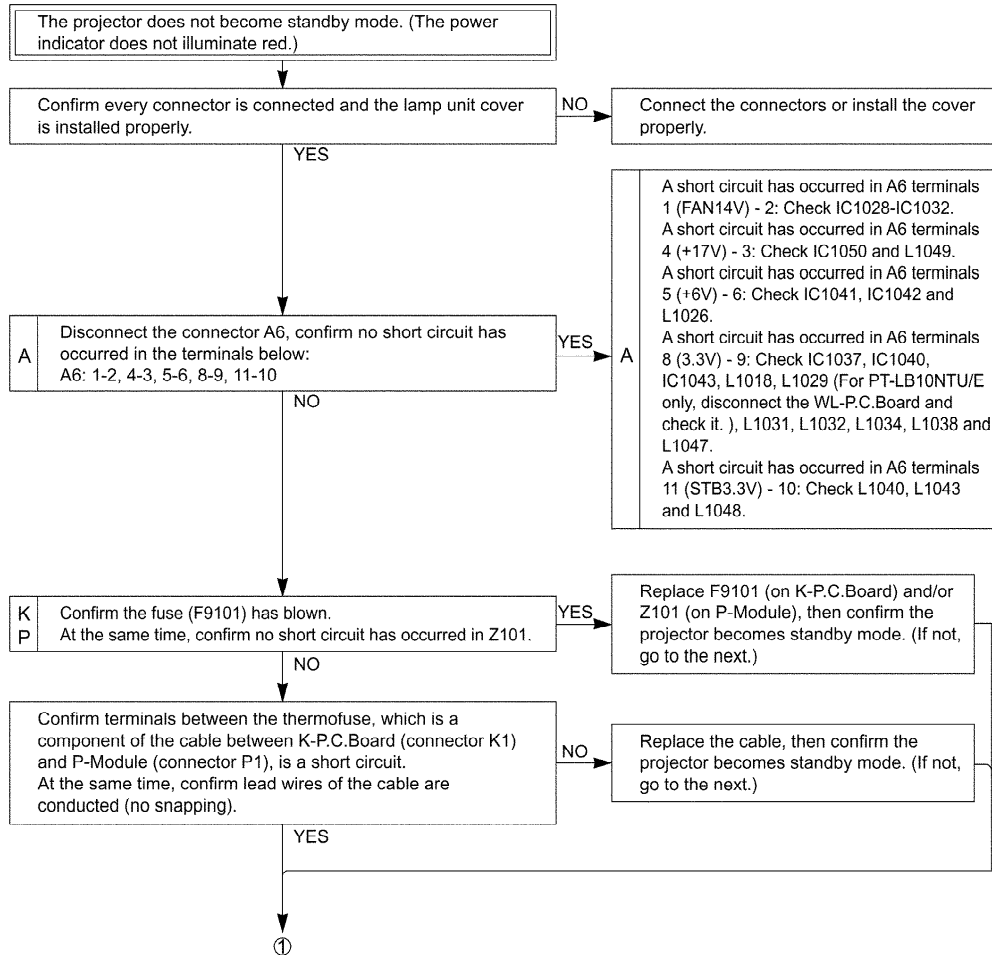
A
---

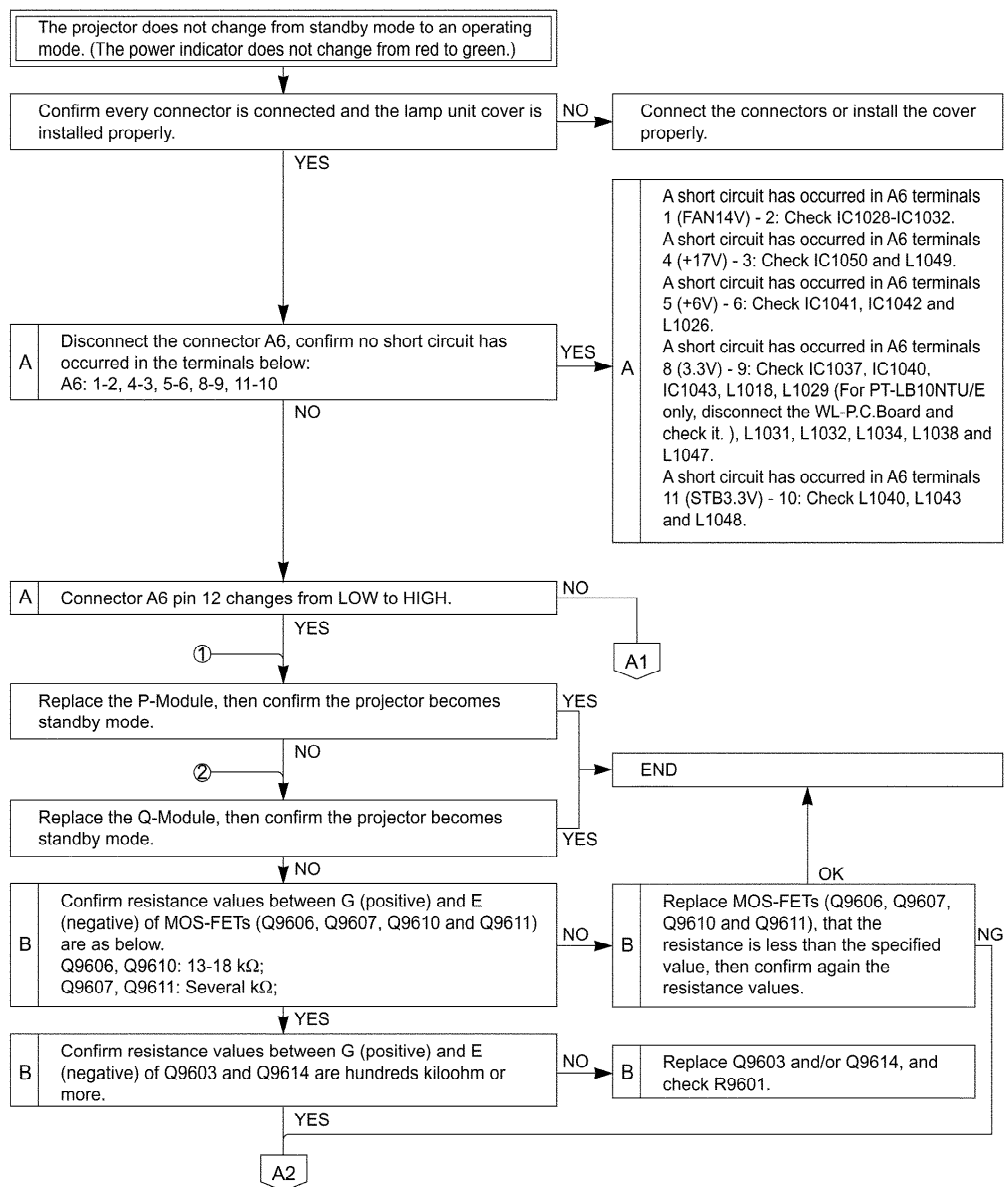
The letter of the alphabet indicates the P.C.Board or Module name.

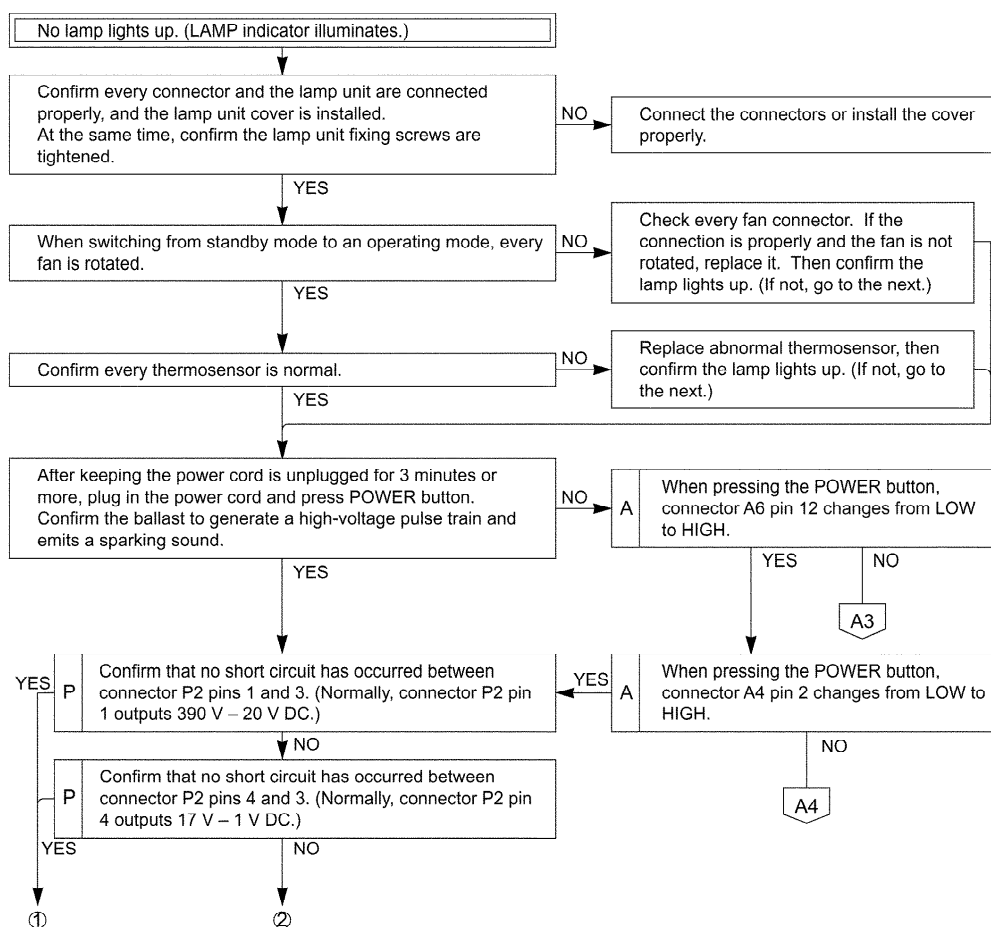
(Example) A: A-P.C.Board, B: B-Module

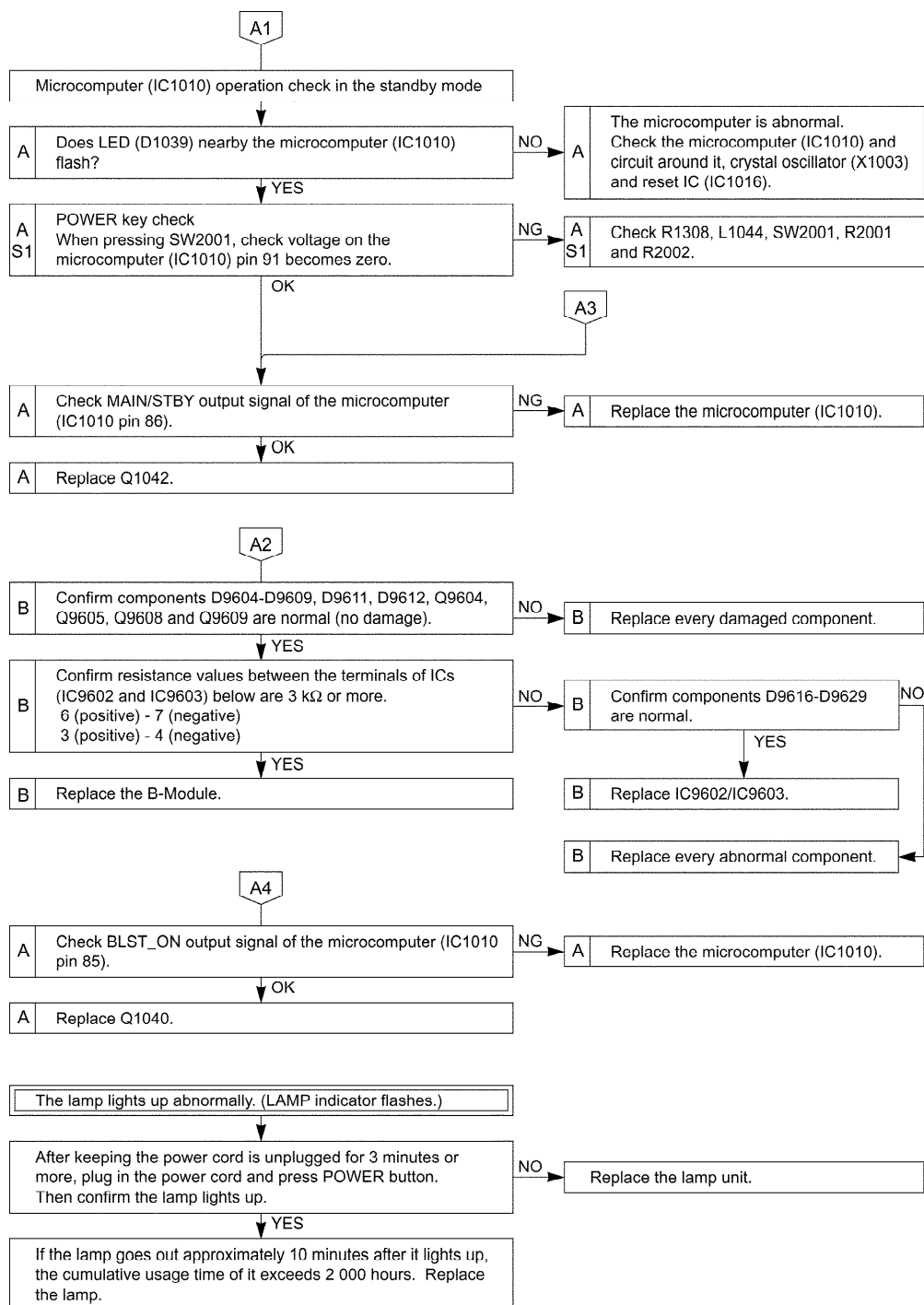
If replacing A-P.C.Board (assembly), read the ROM data from the old P.C.Board and write it in the new one according to the section 8.6. "Software for Adjustment". At this time, if the readout from the old P.C.Board does not succeed, remove IC1011 and IC1017 from the old P.C.Board and install them on the new one.

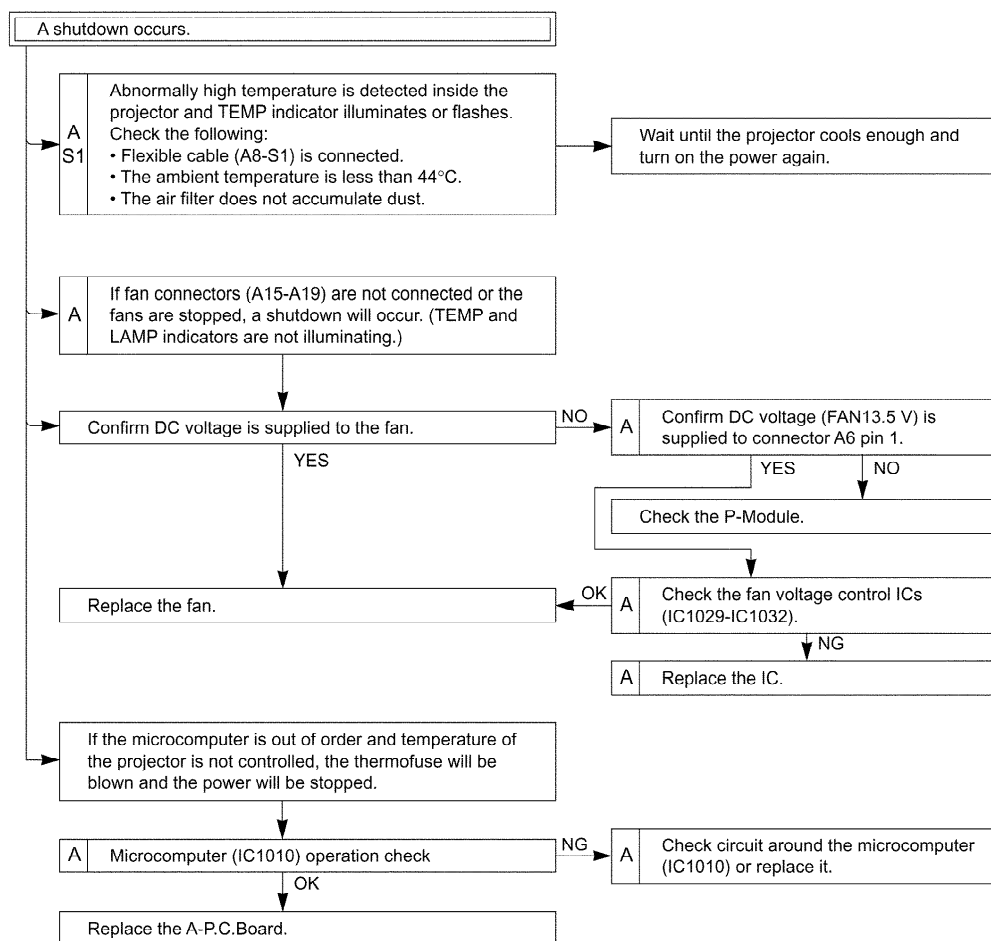
If replacing A-P.C.Board (assembly), adjust the RGB Input Level according to the chapter 8.8. "Input Level Adjustment".

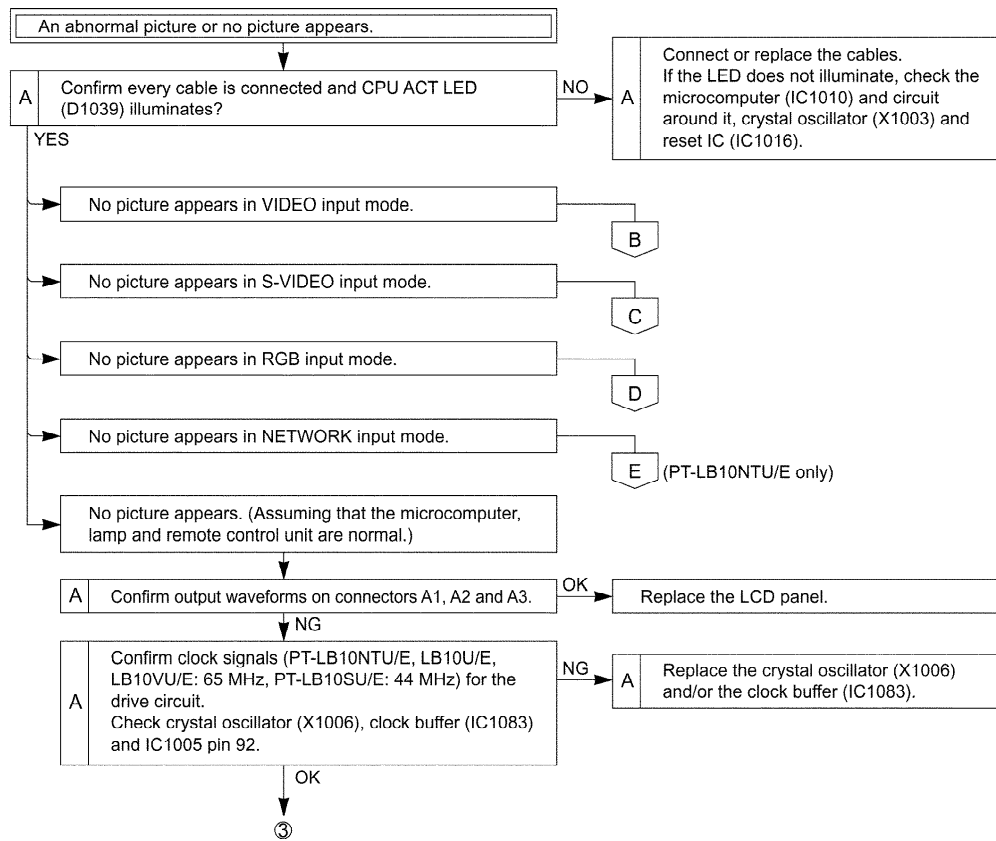


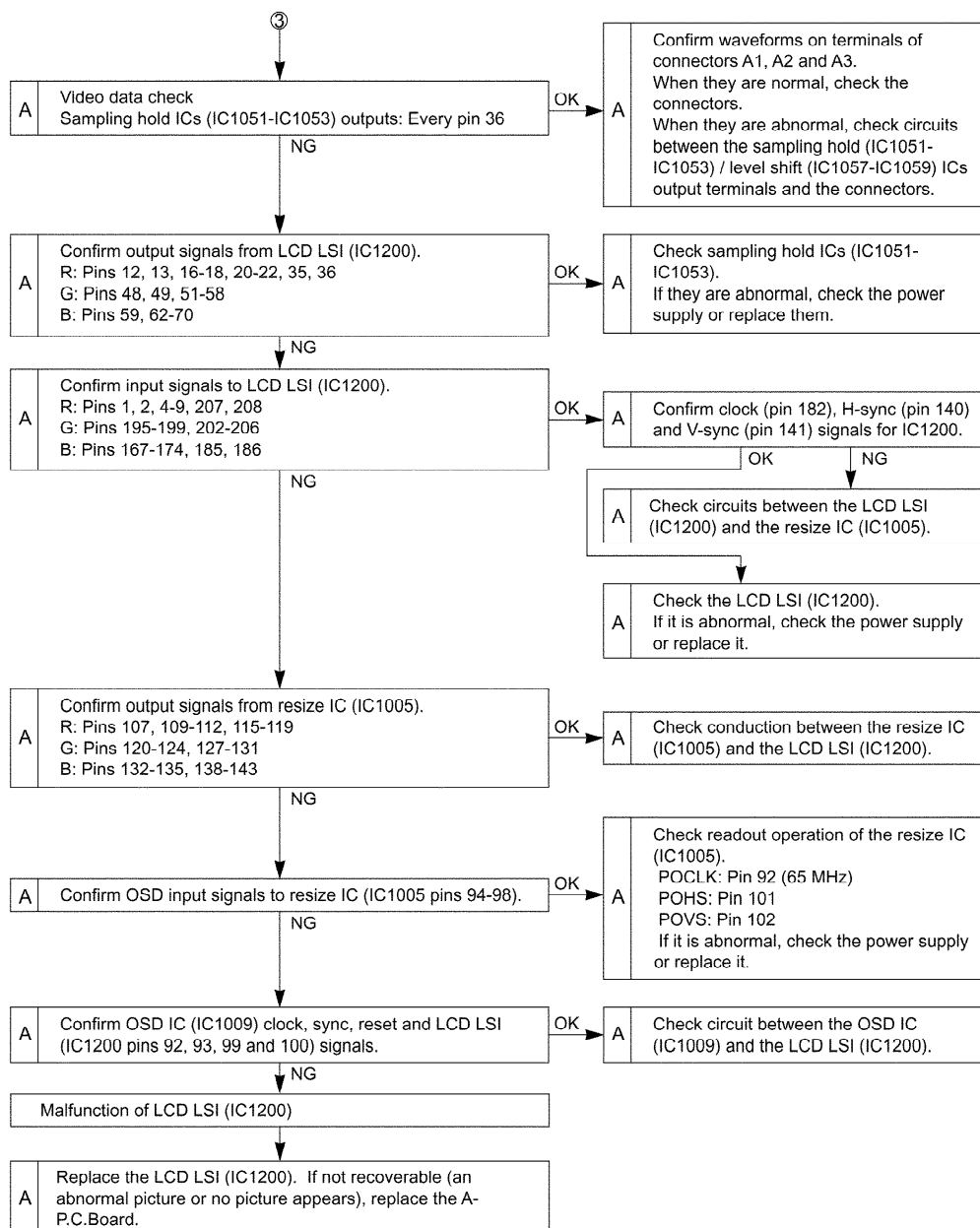


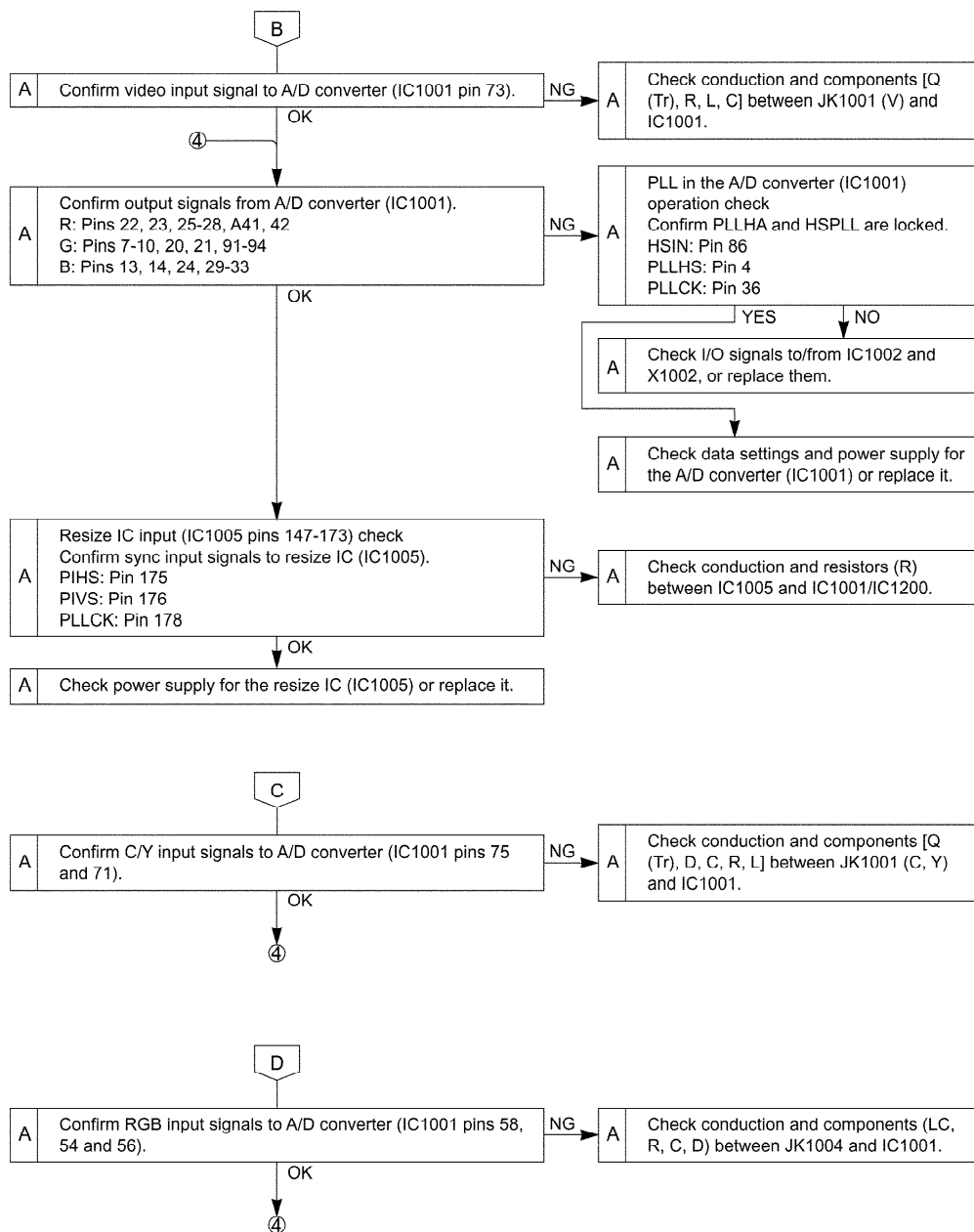




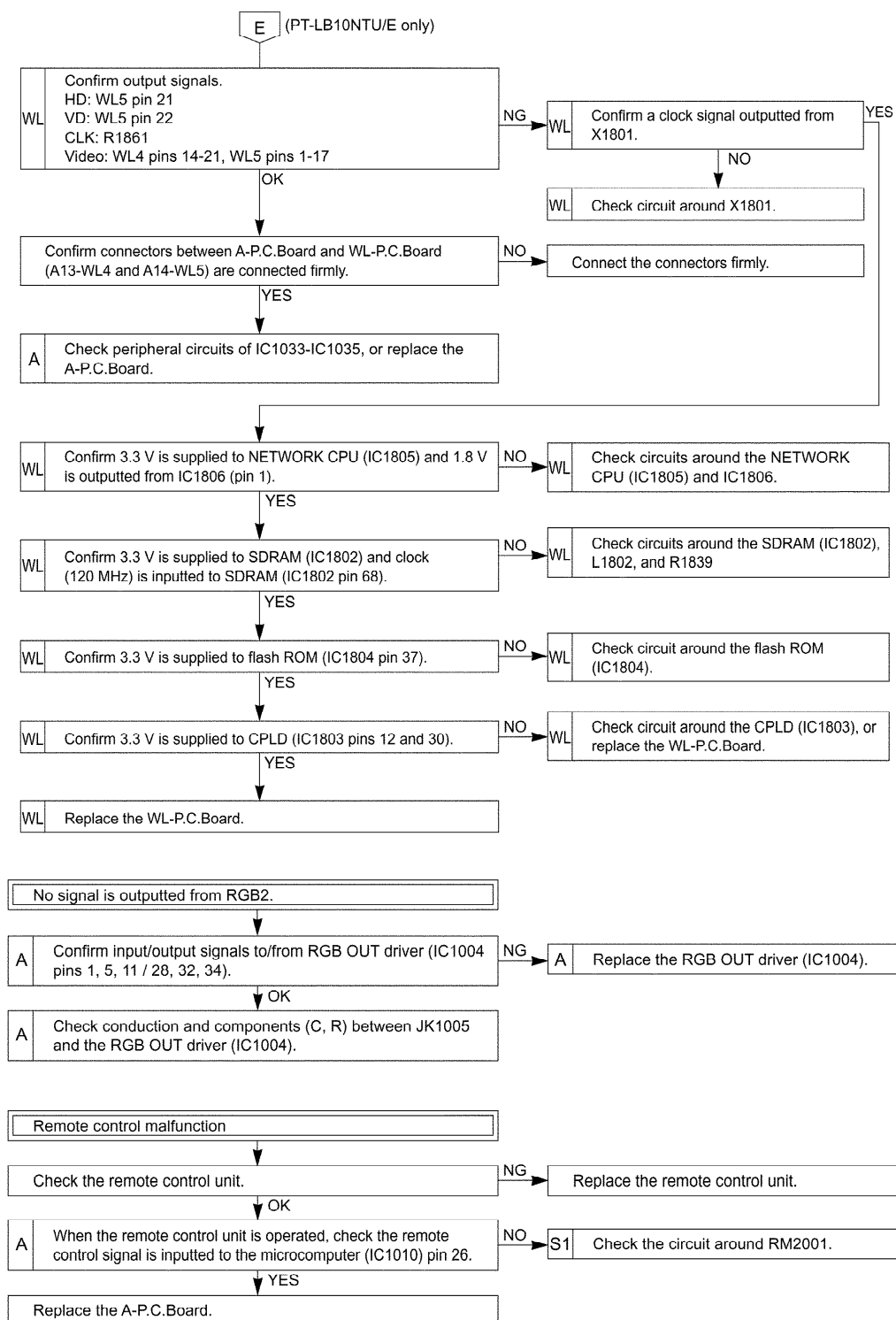


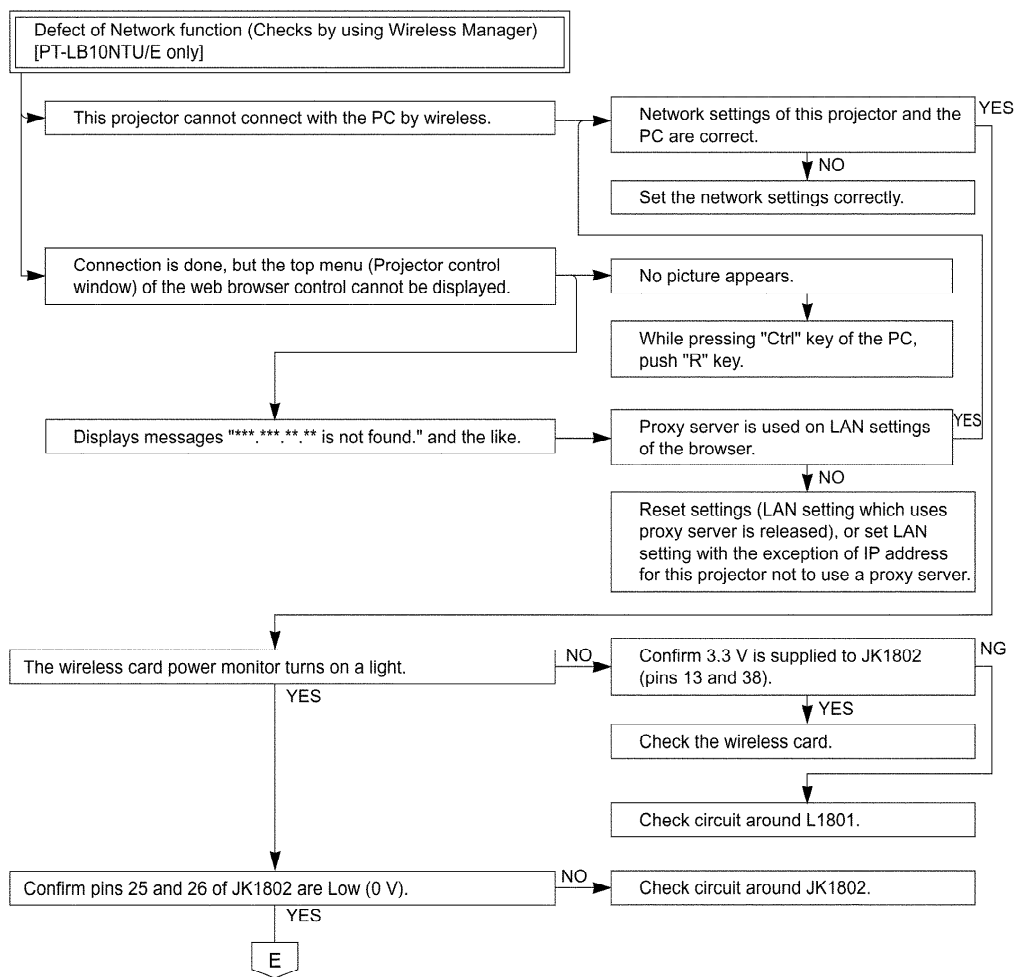












## 10. Interconnection Block Diagram

### 10.1. Interconnection Block Diagram (1 / 2)

### 10.2. Interconnection Block Diagram (2 / 2)

## 11. Block Diagram

### 11.1. Power Supply

### 11.2. Signal Processing (1 / 3)

### 11.3. Signal Processing (2 / 3)

### 11.4. Signal Processing (3 / 3)

## 12. Schematic Diagram


## Schematic Diagram for Model PT-LB10NTU/LB10U/LB10VU/LB10SU

### Important Safety Notice

THE SHADED AREA ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING, IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS OF THE SCHEMATIC.

## Schematic Diagram for Model PT-LB10NTE/LB10E/LB10VE/LB10SE





### Important Safety Notice

Components identified by the international symbol  have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified ones.

### Notes:

#### 1. Resistor

All the resistors are carbon 1/4W resistors, unless marked as follows: The unit of resistance is an OHM [Ω] (K=1 000 M=1 000 000).

-  : Nonflammable
-  : Solid
-  : Wire Wound
-  : Metal Oxide
-  : Metal Film
-  : Fuse

#### 2. Capacitor

-  : Temperature Compensation
-  : Polyester
-  : Metalized Polyester
-  : Polypropylene
-  : Electrolytic
-  : Bipolar
-  : Dipped Tantalum
-  : Z-type

#### 3. Coil

The unit of inductance is a H, unless otherwise noted.

#### 4. Test Point

 : Test Point

#### 5. Voltage Measurement

The voltage is measured by an electronic voltmeter receiving the colorbar signal when all the customer's controls are set to the standard condition.

#### 6. Color code for the links between diagrams and circuit boards

From/To		To/From	Color code
Block diagram	↔	Schematic diagram	Magenta
Schematic diagram	↔	Schematic diagram	Green
Schematic diagram	↔	Circuit boards	Yellow
Schematic diagram	↔	Waveforms	Cyan (Light blue)

#### 7. HOT and COLD Indications

The power circuit board contains a circuit area using a separate power supply to isolate the ground connection. The circuit is defined by HOT and COLD indications in the schematic diagram. Take the precautions below.

#### 8. This schematic diagram is the latest at the time of printing and the subject to change without notice.

### Precautions:

1. NEVER touch the HOT part or the HOT and COLD parts at the same time, or you may get an electric shock.
2. NEVER short circuit the HOT and COLD circuits, or the fuse may blow and the parts may break.
3. NEVER connect an instrument with voltageage to the HOT and COLD circuit simultaneously, or the fuse may blow. Connect the ground of instruments to the ground of the circuit being measured.
4. MAKE SURE to unplug the power cord from the power outlet before removing the chassis.

## 12.1. A-P.C.Board (1 / 4)

## 12.2. A-P.C.Board (2 / 4)

## 12.3. A-P.C.Board (3 / 4)

## 12.4. A-P.C.Board (4 / 4)

## 12.5. WL-P.C.Board (1 / 2)

## 12.6. WL-P.C.Board (2 / 2)

## 12.7. B-Module (1 / 2)

## 12.8. B-Module (2 / 2)

## 12.9. K-P.C.Board

## 12.10. S1-P.C.Board, S2-P.C.Board

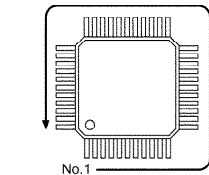
# 13. Circuit Boards

## 13.1. A-P.C.Board (Foil Side) / WL-P.C.Board (Foil Side / Component Side)

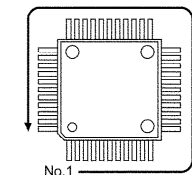
## 13.2. A-P.C.Board (Component) / S1-P.C.Board (Foil Side /

## Component Side)

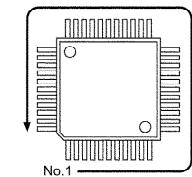
# 14. Terminal guide of ICs and transistors



C1AB00001774 48 Pin  
C1AB00001673 48 Pin  
C1AB00001910 100 Pin  
TVRN203 48 Pin



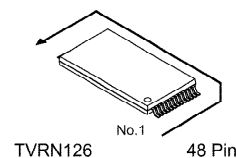
C1AB00001913 208 Pin  
C1AB00001721 208 Pin



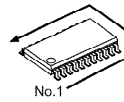
C2DBYH000017 112 Pin



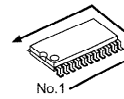
C2GBC0000199



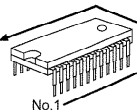
TVRN126 48 Pin



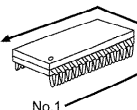
M62398FP 24 Pin  
C0ZBZ0000889 28 Pin  
C0ZBZ0000890 28 Pin  
C0JBAF000379 20 Pin  
C3ABPJ000035 86 Pin  
C0JBAZ000855 20 Pin  
AN5870SB-E1V 36 Pin  
C1CB00001014 20 Pin  
C0JBAZ001633 20 Pin



C3ABQJ000023 86 Pin



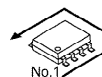
M52036SP 20 Pin



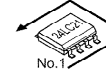
C3BBFC000290 28 Pin



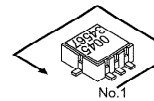
C0DBFFD00003 7 Pin



C0JBAA000244 14 Pin  
C3EBCC000020 8 Pin  
C0JBAZ002128 8 Pin



C1BB00000840 8 Pin  
C3EBJC000038 8 Pin



C1GB00000062 8 Pin



C0CBCAC00096 5 Pin  
C0JBAE000239 5 Pin  
C0JBAZ001870 5 Pin  
C0JBAZ002115 5 Pin



C0DBZJD00003 5 Pin  
C0DBZHD00005 5 Pin



C0DBEZE00002 5 Pin  
C0DBEKG00004 5 Pin



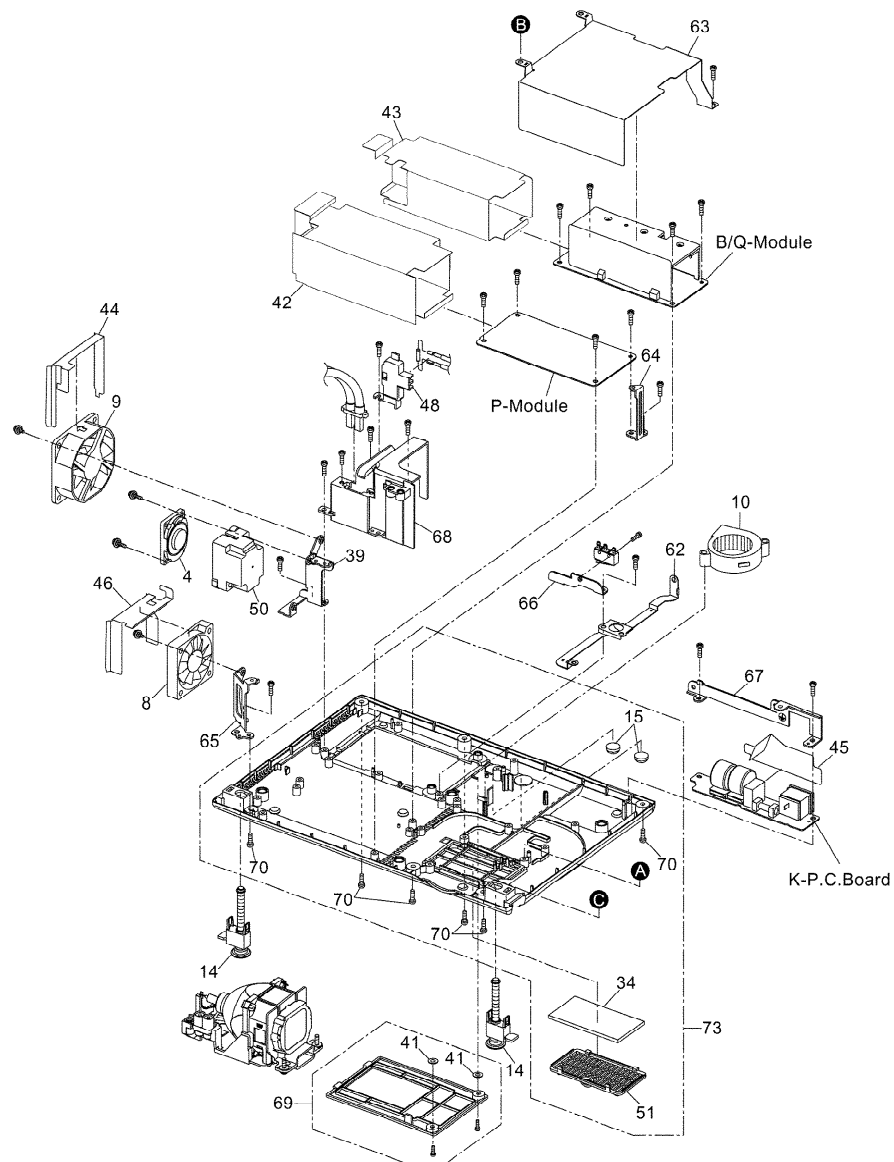
C0DBZFF00004 6 Pin  
C0DBZFF00003 6 Pin  
C0DBZGF00002 6 Pin



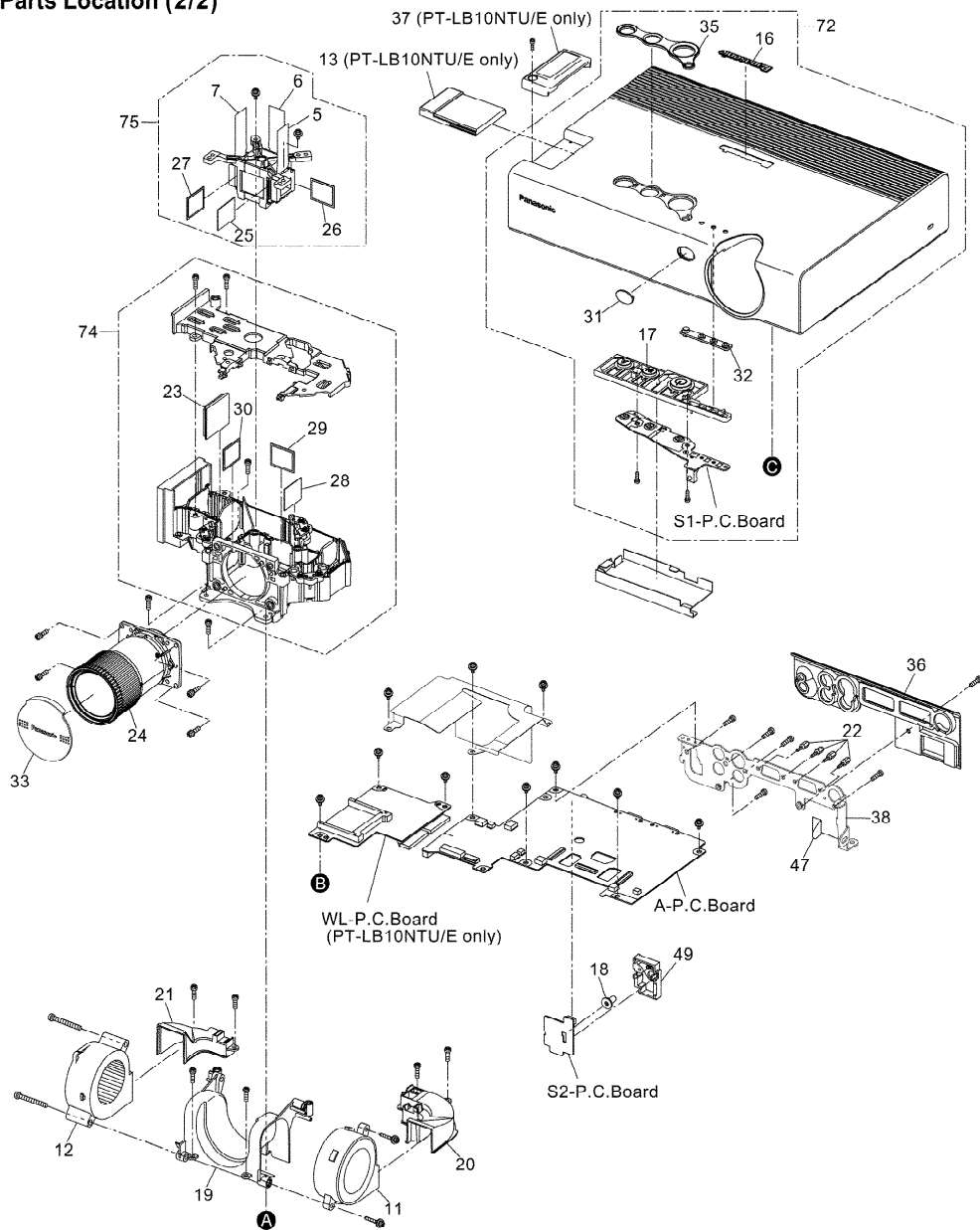
2SB709A  
2SD601AR  
2SB710A

## 15. Exploded Views

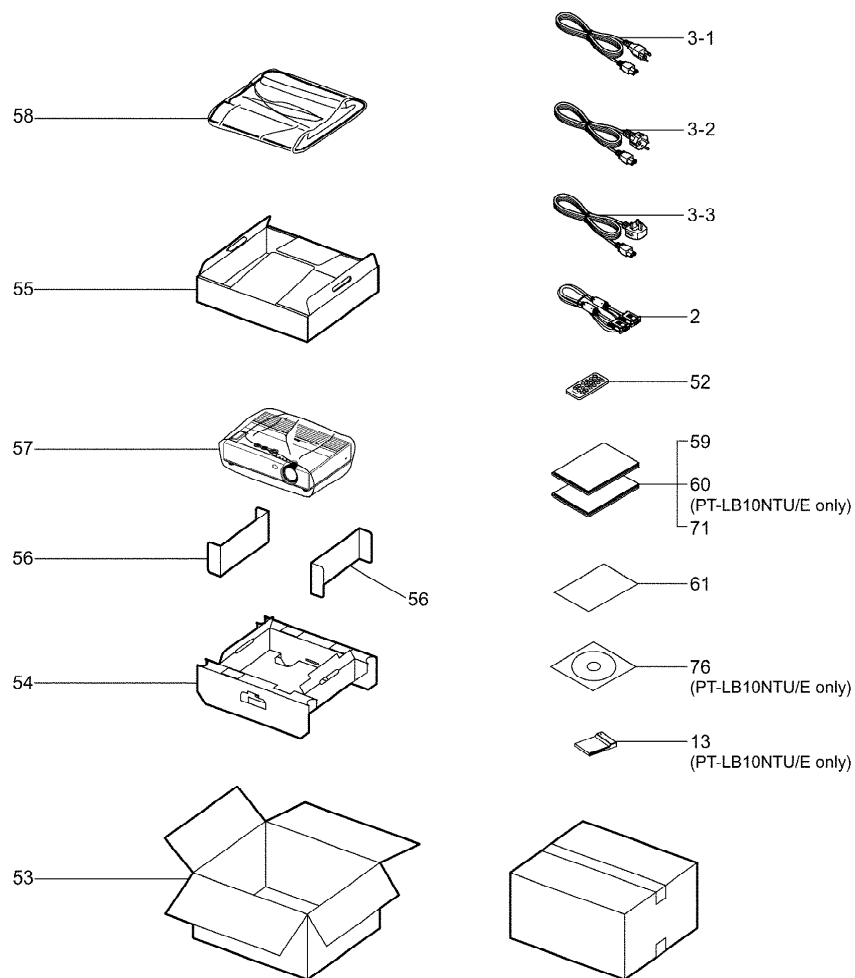
## Parts Location (1/2)



## Parts Location (2/2)




## Packing Parts



## 16. Replacement Parts List

### Important Safety Notice

Components identified by the International symbol  have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified parts.

#### Abbreviation of part name and description

##### 1. Resistor

Example:

ERD25TJ104 C 100KOHM, J, 1/4W

TYPE	ALLOWANCE
C : Carbon	F : - 1 %
F : Fuse	G : - 2 %
M : Metal Oxide	J : - 5 %
Metal Film	K : -10%
S : Solid	M : -20%
W : Wire Wound	

##### 2. Capacitor

Example:

ECKF1H103ZF C 0.01PF, Z, 50V

TYPE	ALLOWANCE
C : Ceramic	C : -0.25 pF
E : Electrolytic	D : -0.5 pF
P : Polyester	F : - 1 pF
PP : Polypropylene	J : - 5 %
S : Polystyrol	K : -10 %
T : Tantalum	L : -15 %
	M : -20 %
	P : +100 %, -0 %
	Z : +80 %, -20 %

#### Notes:

Printed circuit board assembly with mark (RTL) is no longer available after production discontinuation of the complete set.

Ref. No.	Part No.	Part Name & / Description	Remarks
<b>[MECHANICAL PARTS]</b>			
	D4CDH5030001	THERMISTER	
	J0KG00000036	CORE	
<u>2</u>	K1HA15DA0002	CABLE	
<u>3-1</u>	K2CG3DR00005	POWER CORD	 / LB10NTU, LB10U, LB10VU, LB10SU
<u>3-2</u>	K2CM3DR00002	POWER CORD (EUROPE)	 / LB10NTE, LB10E, LB10VE, LB10SE
<u>3-3</u>	K2CT3DR00005	POWER CORD (U.K)	 / LB10NTE, LB10E, LB10VE, LB10SE
<u>4</u>	L0AA04C00004	SPEAKER	
<u>5</u>	L5BDAXQ00143	LIQUID CRYSTAL / DISPLAY(R)	LB10NTU/E, LB10U/E
	L5BDAXQ00131	LIQUID CRYSTAL / DISPLAY(R)	LB10VU/E
	L5BDAXN00073	LIQUID CRYSTAL / DISPLAY(R)	LB10SU/E
<u>6</u>	L5BDAXQ00144	LIQUID CRYSTAL / DISPLAY(G)	LB10NTU/E, LB10U/E
	L5BDAXQ00132	LIQUID CRYSTAL / DISPLAY(G)	LB10VU/E
	L5BDAXN00074	LIQUID CRYSTAL / DISPLAY(G)	LB10SU/E
<u>7</u>	L5BDAXQ00145	LIQUID CRYSTAL / DISPLAY(B)	LB10NTU/E, LB10U/E
	L5BDAXQ00133	LIQUID CRYSTAL / DISPLAY(B)	LB10VU/E
	L5BDAXN00075	LIQUID CRYSTAL / DISPLAY(B)	LB10SU/E
<u>8</u>	L6FAJACH0005	POWER FAN	
<u>9</u>	L6FAKDEH0005	VENTILATION FAN	
<u>10</u>	L6FCHC9H0002	PBS FAN	
<u>11</u>	L6FCKEAH0002	SIROCCO FAN	
<u>12</u>	L6FCKEBH0002	SIROCCO FAN	
<u>13</u>	N5HBD0000028	LAN CARD	 LB10NTU
	N5HBD0000029	LAN CARD	 LB10NTE
<u>14</u>	TBLB0046	ADJUST LEG	
<u>15</u>	TBLG3063	RUBBER LEG (REAR)	
<u>16</u>	TBMA150	PANASONIC BADGE	



Ref. No.	Part No.	Part Name & / Description	Remarks
	TBMF414	MODEL NAME PLATE	LB10NTU
	TBMF415	MODEL NAME PLATE	LB10NTE
	TBMF417	MODEL NAME PLATE	LB10U
	TBMF418	MODEL NAME PLATE	LB10E
	TBMF420	MODEL NAME PLATE	LB10VU
	TBMF421	MODEL NAME PLATE	LB10VE
	TBMF570	MODEL NAME PLATE	LB10SU
	TBMF571	MODEL NAME PLATE	LB10SE
	TBMF423	MODEL NO. LABEL	LB10NTU
	TBMF424	MODEL NO. LABEL	LB10NTE
	TBMF426	MODEL NO. LABEL	LB10U
	TBMF427	MODEL NO. LABEL	LB10E
	TBMF429	MODEL NO. LABEL	LB10VU
	TBMF430	MODEL NO. LABEL	LB10VE
	TBMF573	MODEL NO. LABEL	LB10SU
	TBMF574	MODEL NO. LABEL	LB10SE
17	TBXA38201-1	CONTROL BUTTON	
18	TBXA38301-1	CURSOR BUTTON	
19	TEEC5112	DUCT 1	
20	TEEC5148	DUCT 2	
21	TEEC5149	DUCT 3	
	THEA124N	SCREW	LB10NTU/E
22	THEC035N	SCREW	
23	TKGF0088-1	PBS	
24	TKGF0092-1	LENS	LB10NTU/E, LB10U/E, LB10SU/E
	TKGF0093	LENS	LB10VU/E
25	TKGP5226	POLARIZING PLATE/OUT(R)	
26	TKGP5227	POLARIZING PLATE/OUT(G)	
27	TKGP5228-1	POLARIZING PLATE/OUT(B)	
28	TKGP5229	POLARIZING PLATE/IN(R)	
29	TKGP5230	POLARIZING PLATE/IN(G)	
30	TKGP5231	POLARIZING PLATE/IN(B)	
31	TKKC5142	REMOTE RECEIVER / PLATE(F)	
32	TKKC5167	LED PLATE	
33	TKKL5297	LENS CAP	
	TKLA0701	6 ANGLE WRENCH	LB10NTU/E
34	TKNE051	FILTER	
35	TKPA75202	BUTTON DECORATION / BOARD	LB10NTU/E, LB10U/E, LB10SU/E
	TKPA75201	BUTTON DECORATION / BOARD	LB10VU/E
36	TKPA86901	TERMINAL COVER	
37	TKXA17301	CARD LOCK	LB10NTU/E
38	TKZF5034	TERMINAL METAL	
39	TKZJ5053	VENTILATION FAN METAL	
	TKZJ5054	FAN GUARD METAL	
	TMKG389	FAN SPONGE	
	TMKG396-1	SPEAKER SPACER	
	TMKG422	SPACER	
41	TMKX100	WASHER	
	TMKX511	SHELTER SHEET	
42	TMKX661	POWER INSULATION / SHEET	
43	TMKX662	BALLAST INSULATION / SHEET	
44	TMKX663	VENTILATION FAN GUARD	
45	TMKX664	INSULATION SHEET / (K-PCB)	
	TMKX665	GUIDE PLATE	

Ref. No.	Part No.	Part Name & / Description	Remarks
46	TMKX689	POWER FAN COVER	
47	TMKX703	SHEET	
48	TMXC020	TEMP FUSE METAL	
49	TMXE034-1	HOLDER	
50	TMZK5021	SPEAKER BOX	
51	TMZX5034	FILTER COVER	
52	TNQE239	REMOTE CONTROLLER	
53	TPCB57402	CARTON	LB10NTU
	TPCB57403	CARTON	LB10NTE
	TPCB57405	CARTON	LB10U
	TPCB57406	CARTON	LB10E
	TPCB57408	CARTON	LB10VU
	TPCB57409	CARTON	LB10VE
	TPCB57412	CARTON	LB10SU
	TPCB57413	CARTON	LB10SE
54	TPDF1041	CUSHION 1	
55	TPDF1042	ACCESSORY CARTON	
56	TPDF1066	CUSHION 2	
57	TPEH124-1	SET COVER	
58	TPEP013	CARRING CASE	
	TQB817002-1	SAFETY SHEET	LB10NTU, LB10U, LB10VU, LB10SU
60	TQBH0149	INSTRUCTION BOOK / (SUB)	⚠ LB10NTU/E
61	TQBH7017	SHEET (PASSWORD)	
59	TQBJ0141	INSTRUCTION BOOK	⚠ / LB10NTU, LB10U, LB10VU, LB10SU
	TQBJ0142	INSTRUCTION BOOK	⚠ / LB10NTE, LB10E, LB10VE, LB10SE
	TQD1712010	LABEL	
	TQDJ18004	GUARANTEE CARD / (CANADA)	LB10NTU, LB10U, LB10VU, LB10SU
	TQDJ18015-6	GUARANTEE CARD (USA)	LB10NTU, LB10U, LB10VU, LB10SU
	TQDJ19009	SIMPLE SHEET	LB10NTU
	TQDJ19010	SIMPLE SHEET / (U.K,SPAIN)	LB10NTE
	TQDJ19011	SIMPLE SHEET / (FRANCE,ITALY)	LB10NTE
	TQDJ19012	SIMPLE SHEET / (GERMANY,KOREA)	LB10NTE
	TQF86202	LABEL	
	TSKA159	CORE	J0KG00000011
	TSXL405	FLEX CABLE	⚠
	TUCB5027	ALUMINUM SHEET	
62	TUCX5161	EARTH METAL 1	
63	TUCX5162	EARTH METAL 2	
64	TUCX5163	EARTH METAL(A-PCB)	
65	TUCX5164	EARTH METAL(WL-PCB)	
66	TUWC051	INTERLOCK METAL	
67	TUWC052	METAL	
68	TXFEE01VJW5	LAMP HOUSE	
69	TXFKL01VJW5	LAMP COVER ASSY	
	TXJ/B1VJW5	LEAD WIRE (B1-P2)	⚠
	TXJ/L2VJW5	LAMP CABLE	
	TXJ/P1VJW5	LEAD WIRE (K1-P1)	⚠
	TXJ/P3VJW5	LEAD WIRE (P3-A6)	⚠

Ref. No.	Part No.	Part Name & / Description	Remarks
	TXJ/Q3VJW5	LEAD WIRE (Q3-A4)	
	XSB3+8FN	SCREW	
70	XTBT969Z	SCREW	
	XTN3+6G	SCREW	
	XTW3+8P	TAPPING SCREW	
	XYN2+F6	SCREW	
	XYN2+J10	SCREW	
	XYN3+F10	SCREW	
	XYN3+F14	SCREW	
	XYN3+F30FZ	SCREW	
	XYN3+F8	SCREW	LB10NTU/E
	XYN3+J8	SCREW	
	XYN4+E8	SCREW	
71	XZBT6532	POLY BAG	LB10NTU/E, LB10U, LB10VU
72	TXFKF99PVMZ	UPPER COVER	LB10NTU/E
	TXFKF99PVNZ	UPPER COVER	LB10U/E, LB10SU/E
	TXFKF99PVPZ	UPPER COVER	LB10VU/E
73	TXFKF98PVMZ	BOTTOM COVER	LB10NTU
	TXFKF98PVQZ	BOTTOM COVER	LB10NTE
	TXFKF98PVNZ	BOTTOM COVER	LB10U
	TXFKF99PVRZ	BOTTOM COVER	LB10E
	TXFKF98PVPZ	BOTTOM COVER	LB10VU
	TXFKF99PVSZ	BOTTOM COVER	LB10VE
	TXFKF99PXAZ	BOTTOM COVER	LB10SU
	TXFKF99PXBZ	BOTTOM COVER	LB10SE
74	TXFEC98VJW5	ANALYSIS BLOCK	
75	TXFEC99VJW5	OPTICAL BLOCK	LB10NTU/E, LB10U/E
	TXFEC99VJW7	OPTICAL BLOCK	LB10VU/E
	TXFEC99PXAZ	OPTICAL BLOCK	LB10SU/E
76	TXFQB99VJW5	CD-ROM	LB10NTU/E
[INTEGRATED CIRCUIT]			
IC1001	C1AB00001988	I.C	
IC1002	C0JBAA000233	I.C	
IC1003	M52036SP	I.C	C1AA00000392
IC1004	AN5870SB	I.C	
IC1005	C1AB00001913	I.C	
IC1006	C3ABPJ000035	I.C	
IC1009	C0ZBZ0000890	I.C	
IC1010	C2DBYH000017	I.C	
IC1011	TVRN126	I.C	LB10NTU/E, LB10U/E, LB10VU/E
	TVRN266	I.C	LB10SU/E
IC1012	74LVC574APWL	I.C	C0JBAF000379
IC1013	C0JBAE000239	I.C	
IC1015	74LVC574APWL	I.C	C0JBAF000379
IC1016	C0EBE0000336	I.C	
IC1017	C3EBJC000038	I.C	
IC1018	C1GB00000062	I.C	
IC1019	C0CBCAC00096	I.C	
IC1020	C0JBAA000345	I.C	
IC1021	M62398FP	I.C	C0FBBD000087
IC1023	C0JBAE000239	I.C	
IC1024	24LC21T-I/SN	I.C	C3EBCC000020



Ref. No.	Part No.	Part Name & / Description	Remarks
IC1025	C0JBAA000345	I.C	
IC1026	C1BB00000840	I.C	
IC1027	C3BBFC000290	I.C	LB10NTU/E
IC1028	C0DBZJD00003	I.C	
IC1029	C0DBEZE00002	I.C	
IC1030	C0DBEZE00002	I.C	
IC1031	C0DBEZE00002	I.C	
IC1032	C0DBEZE00002	I.C	
IC1033	C0JBAZ001633	I.C	LB10NTU/E
IC1034	C0JBAZ001633	I.C	LB10NTU/E
IC1035	C0JBAZ001633	I.C	LB10NTU/E
IC1037	C0DBZFF00003	I.C	
IC1038	C0JBAZ001870	I.C	
IC1039	C0JBAZ002115	I.C	
IC1040	C0DBZFF00004	I.C	
IC1041	C0DBZHD00005	I.C	
IC1042	C0DBZGF00002	I.C	
IC1043	C0DBZFD00018	I.C	
IC1050	C0DBEKG00004	I.C	
IC1051	C1AB00001774	I.C	
IC1052	C1AB00001774	I.C	
IC1053	C1AB00001774	I.C	
IC1057	C1AB00001673	I.C	
IC1058	C1AB00001673	I.C	
IC1059	C1AB00001673	I.C	
IC1068	C0JBAZ000855	I.C	
IC1070	C1CB00001014	I.C	
IC1072	AN78L05M	I.C	
IC1083	C0JBAZ002128	I.C	
IC1200	C1AB00001721	I.C	
IC1802	C3ABQJ000023	I.C	LB10NTU/E
IC1803	TVRN203	I.C	LB10NTU/E
IC1804	TVRN150	I.C	LB10NTU/E
IC1805	C2GBC0000199	I.C	LB10NTU/E
IC1806	C0DBFFD00003	I.C	LB10NTU/E
IC9602	C0ZAZ0000077	I.C	
IC9603	C0ZAZ0000077	I.C	
[TRANSISTORS]			
Q1006	2SD1819A0L	TRANSISTOR	
Q1007	2SB1218A0L	TRANSISTOR	
Q1008	2SD1819A0L	TRANSISTOR	
Q1009	2SD1819A0L	TRANSISTOR	
Q1011	2SB1218A0L	TRANSISTOR	
Q1012	2SD1819A0L	TRANSISTOR	
Q1013	2SD1819A0L	TRANSISTOR	
Q1014	2SB1218A0L	TRANSISTOR	
Q1017	2SD1819A0L	TRANSISTOR	
Q1019	2SD1819A0L	TRANSISTOR	
Q1020	2SD1819A0L	TRANSISTOR	
Q1021	2SD1819A0L	TRANSISTOR	
Q1022	B1DHDD000020	TRANSISTOR	
Q1027	2SD1819A0L	TRANSISTOR	

Ref. No.	Part No.	Part Name & / Description	Remarks
Q1032	2SD1819A0L	TRANSISTOR	
Q1033	2SD1819A0L	TRANSISTOR	
Q1034	2SD1819A0L	TRANSISTOR	
Q1035	2SD1819A0L	TRANSISTOR	
Q1036	2SB1218A0L	TRANSISTOR	
Q1038	B1CBHD000001	TRANSISTOR	
Q1039	B1CBHD000001	TRANSISTOR	
Q1040	2SD1819A0L	TRANSISTOR	
Q1041	2SD1819A0L	TRANSISTOR	
Q1042	2SD1819A0L	TRANSISTOR	
Q1043	2SD1819A0L	TRANSISTOR	
Q2001	2SD601A-R	TRANSISTOR	2SD0601AR
Q2002	2SD601A-R	TRANSISTOR	2SD0601AR
Q2003	2SD601A-R	TRANSISTOR	2SD0601AR
Q2004	2SB709A	TRANSISTOR	2SB0709A
Q2005	2SB709A	TRANSISTOR	2SB0709A
Q9603	B1DEGQ000017	TRANSISTOR	
Q9604	2SB710A	TRANSISTOR	2SB0710A
Q9605	2SB710A	TRANSISTOR	2SB0710A
Q9606	B1DEGM000022	TRANSISTOR	
Q9607	B1DEGM000022	TRANSISTOR	
Q9608	2SB710A	TRANSISTOR	2SB0710A
Q9609	2SB710A	TRANSISTOR	2SB0710A
Q9610	B1DEGM000022	TRANSISTOR	
Q9611	B1DEGM000022	TRANSISTOR	
Q9614	B1DEGQ000017	TRANSISTOR	
[DIODES]			
D1001	MAZ80560ML	DIODE	
D1002	MAZ81500ML	DIODE	
D1003	MAZ81500ML	DIODE	
D1004	MAZ81500ML	DIODE	
D1005	MAZ81500ML	DIODE	
D1009	MAZ80560ML	DIODE	
D1010	MAZ80560ML	DIODE	
D1011	MAZ80560ML	DIODE	
D1012	MAZ80560ML	DIODE	
D1016	MAZ80560ML	DIODE	
D1017	MAZ80560ML	DIODE	
D1018	MAZ80560ML	DIODE	
D1019	MA157A	DIODE	MA3X157A
D1021	MAZ80560ML	DIODE	
D1022	MA157A	DIODE	MA3X157A
D1023	MA157A	DIODE	MA3X157A
D1024	MA157A	DIODE	MA3X157A
D1026	MA157A	DIODE	MA3X157A
D1028	MA157A	DIODE	MA3X157A
D1034	MA157A	DIODE	MA3X157A
D1035	MA157A	DIODE	MA3X157A
D1036	B0JCPD000010	DIODE	
D1037	B0JCPD000010	DIODE	
D1038	MA3X152E0L	DIODE	
D1039	LNJ208R8ARA	LED	

Ref. No.	Part No.	Part Name & / Description	Remarks
D1041	MA2S11100L	DIODE	
D1042	MAZY12000L	DIODE	
D1043	B0HCMM000001	DIODE	
D1065	D4CC1103A037	THERMISTOR	
D2001	B3AAB0000168	DIODE	
D2002	B3AAB0000168	DIODE	
D2003	B3ABB0000181	DIODE	
D2004	LNJ107W5ARA1	LED	
D2005	MA157A	DIODE	MA3X157A
D9101	ERZV10D751	VARISTOR	
D9601	B0HASR000006	DIODE	
D9604	MA158	DIODE	MA3X158
D9605	MA2Z72000L	DIODE	
D9606	MA158	DIODE	MA3X158
D9607	MA2Z72000L	DIODE	
D9608	MA158	DIODE	MA3X158
D9609	MA2Z72000L	DIODE	
D9611	MA158	DIODE	MA3X158
D9612	MA2Z72000L	DIODE	
D9616	D1FL40F4063	DIODE	B0ECHP000001
D9617	MA2Z72000L	DIODE	
D9618	MA2Z72000L	DIODE	
D9619	MA2Z72000L	DIODE	
D9629	MA2Z72000L	DIODE	
D9621	MA2Z72000L	DIODE	
D9622	D1FL40F4063	DIODE	B0ECHP000001
D9623	D1FL40F4063	DIODE	B0ECHP000001
D9624	MA2Z72000L	DIODE	
D9625	MA2Z72000L	DIODE	
D9626	MA2Z72000L	DIODE	
D9627	MA2Z72000L	DIODE	
D9628	MA2Z72000L	DIODE	
D9629	D1FL40F4063	DIODE	B0ECHP000001
[COILS]			
L1001	J0JCC0000168	FILTER	
L1002	J0JCC0000168	FILTER	
L1003	J0JCC0000168	FILTER	
L1004	J0JCC0000168	FILTER	
L1005	J0JJC0000022	EMI FILTER	
L1006	ELJFA150JF	COIL	
L1007	ELJFA150JF	COIL	
L1008	J0JJC0000022	EMI FILTER	
L1009	J0JCC0000168	FILTER	
L1010	J0JJC0000022	EMI FILTER	
L1011	J0JJC0000022	EMI FILTER	
L1012	J0JJC0000022	EMI FILTER	
L1014	J0JCC0000168	FILTER	
L1015	J0JJC0000022	EMI FILTER	
L1016	J0JCC0000168	FILTER	
L1017	J0JJC0000022	EMI FILTER	
L1018	J0JJC0000022	EMI FILTER	
L1019	J0JJC0000022	EMI FILTER	

Ref. No.	Part No.	Part Name & / Description	Remarks
L1020	J0JJC0000022	EMI FILTER	
L1021	EZASCE101M	CAPACITOR ARRAY	LB10NTU/E
L1022	EZASCE101M	CAPACITOR ARRAY	LB10NTU/E
L1023	EZASCE101M	CAPACITOR ARRAY	LB10NTU/E
L1024	EZASCE101M	CAPACITOR ARRAY	LB10NTU/E
L1025	EZASCE101M	CAPACITOR ARRAY	LB10NTU/E
L1026	EZASCE101M	CAPACITOR ARRAY	LB10NTU/E
L1027	J0JJC0000022	EMI FILTER	
L1028	J0JJC0000022	EMI FILTER	LB10NTU/E
L1029	J0JJC0000022	EMI FILTER	LB10NTU/E
L1030	J0JJC0000022	EMI FILTER	LB10NTU/E
L1031	J0JJC0000022	EMI FILTER	
L1032	J0JJC0000022	EMI FILTER	
L1033	ELJFA470JF	COIL	
L1034	J0JJC0000022	EMI FILTER	
L1035	J0JJC0000238	FILTER	LB10NTU/E, LB10U/E, LB10VU/E
	J0JJC0000168	FILTER	LB10SU/E
L1036	ELJFA6R8JB	CHIP COIL	
L1037	ELJFA470JF	COIL	
L1038	J0JJC0000022	EMI FILTER	
L1039	J0JJC0000238	FILTER	LB10NTU/E, LB10U/E, LB10VU/E
	J0JJC0000168	FILTER	LB10SU/E
L1040	J0JJC0000022	EMI FILTER	
L1041	J0JJC0000022	EMI FILTER	
L1042	J0JJC0000022	EMI FILTER	
L1043	J0JJC0000022	EMI FILTER	
L1044	J0JJC0000022	EMI FILTER	
L1045	J0JJC0000238	FILTER	LB10NTU/E, LB10U/E, LB10VU/E
	J0JJC0000168	FILTER	LB10SU/E
L1046	J0JJC0000238	FILTER	LB10NTU/E, LB10U/E, LB10VU/E
	J0JJC0000168	FILTER	LB10SU/E
L1047	J0JJC0000022	EMI FILTER	
L1048	J0JJC0000022	EMI FILTER	
L1049	J0JJC0000022	EMI FILTER	
L1050	J0JJC0000022	EMI FILTER	
L1051	J0JJC0000022	EMI FILTER	
L1052	J0JJC0000022	EMI FILTER	
L1053	J0JJC0000022	EMI FILTER	
L1054	ERJ3GEY0R00	M 0 OHM, 1/16W	
L1055	J0JJC0000022	EMI FILTER	
L1056	ERJ3GEY0R00	M 0 OHM, 1/16W	
L1057	J0JJC0000022	EMI FILTER	
L1058	ERJ3GEY0R00	M 0 OHM, 1/16W	
L1059	J0JJC0000022	EMI FILTER	
L1060	J0JJC0000022	EMI FILTER	
L1061	J0JJC0000022	EMI FILTER	
L1062	J0JJC0000022	EMI FILTER	
L1063	J0JJC0000022	EMI FILTER	
L1064	J0JJC0000022	EMI FILTER	
L1066	J0JJC0000168	FILTER	
L1067	J0JJC0000168	FILTER	
L1068	J0JJC0000168	FILTER	
L1069	J0JJC0000168	FILTER	
L1070	J0JJC0000168	COIL	



Ref. No.	Part No.	Part Name & / Description	Remarks
L1071	J0JCC0000168	COIL	
L1072	J0JCC0000168	COIL	
L1073	J0JCC0000168	COIL	
L1074	J0JCC0000168	COIL	
L1075	J0JCC0000168	COIL	
L1077	J0JCC0000168	COIL	
L1082	J0JJC0000022	EMI FILTER	LB10NTU/E
L1801	EXCML16A270	COIL	LB10NTU/E
L1803	J0JBD0000007	COIL	LB10NTU/E
L1804	J0JBD0000007	COIL	LB10NTU/E
L1805	J0JBD0000007	COIL	LB10NTU/E
L1806	J0JBD0000007	COIL	LB10NTU/E
L1807	J0JBD0000007	COIL	LB10NTU/E
L1808	J0JBD0000007	COIL	LB10NTU/E
L1809	J0JBD0000007	COIL	LB10NTU/E
L1810	J0JBD0000007	COIL	LB10NTU/E
LC1801	EZASCE101M	CAPACITOR ARRAY	LB10NTU/E
LF9001	G0B592H00001	COIL	
LF9002	G0B592H00001	COIL	
LF9101	G0B592H00001	COIL	
LF9102	G0B592H00001	COIL	
[RESISTORS]			
R1001	ERJ3GEYJ331	M 330 OHM,J,1/16W	
R1016	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R1017	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	
R1021	ERJ3GEYJ101	M 100 OHM,J,1/16W	D0GB101JA002
R1022	ERJ3GEYJ101	M 100 OHM,J,1/16W	D0GB101JA002
R1024	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	
R1025	ERJ3GEYJ331	M 330 OHM,J,1/16W	
R1027	ERJ6ENF75R0	M 75 OHM, 1/10W	
R1029	ERJ6ENF75R0	M 75 OHM, 1/10W	
R1030	ERJ6ENF75R0	M 75 OHM, 1/10W	
R1039	ERJ2GEJ100	M 10 OHM, 0.063W	
R1041	ERJ6GEYJ750	M 75 OHM,J,1/10W	
R1042	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1044	ERJ3GEYJ223	M 22K OHM,J,1/16W	
R1045	ERJ3GEYJ331	M 330 OHM,J,1/16W	
R1047	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	
R1048	ERJ3GEYJ562	M 5.6KOHM,J,1/16W	
R1049	ERJ3GEYJ183	M 18K OHM,J,1/16W	
R1050	ERJ3GEYJ223	M 22K OHM,J,1/16W	
R1051	ERJ3GEYJ473	M 47K OHM,J,1/16W	
R1052	ERJ3GEYJ560	M 56 OHM,J,1/16W	
R1053	ERJ3GEYJ5R1	M 5.1 OHM,J,1/16W	
R1054	ERJ3GEYJ5R1	M 5.1 OHM,J,1/16W	
R1055	ERJ3GEYJ5R1	M 5.1 OHM,J,1/16W	
R1056	ERJ3GEYJ102	M 1K OHM,J,1/16W	
R1057	ERJ6GEYJ750	M 75 OHM,J,1/10W	
R1058	ERJ3GEYJ104	M 100KOHM,J,1/16W	
R1059	ERJ3GEYJ471	M 470 OHM,J,1/16W	
R1060	ERJ3GEYJ330	M 33 OHM,J,1/16W	
R1061	ERJ3GEYJ330	M 33 OHM,J,1/16W	

11001	110021000	110031000	
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Ref. No.	Part No.	Part Name & / Description	Remarks
R1064	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	
R1065	ERJ3GEYJ562	M 5.6KOHM,J,1/16W	
R1070	ERJ3GEYJ681	M 680 OHM,J,1/16W	
R1071	ERJ6GEYJ750	M 75 OHM,J,1/10W	
R1072	ERJ3GEYJ560	M 56 OHM,J,1/16W	
R1073	ERJ3GEYJ471	M 470 OHM,J,1/16W	
R1074	ERJ3GEYJ103	M 10K OHM,J,1/16W	
R1075	ERJ3GEYJ681	M 680 OHM,J,1/16W	
R1078	ERJ3GEYJ103	M 10K OHM,J,1/16W	
R1079	ERJ3GEYJ103	M 10K OHM,J,1/16W	
R1081	ERJ3GEYJ560	M 56 OHM,J,1/16W	
R1082	ERJ3GEYJ682	M 6.8KOHM,J,1/16W	
R1083	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	
R1084	ERJ3GEYJ122	M 1.2KOHM,J,1/16W	
R1085	ERJ3GEYJ332	M 3.3KOHM,J,1/16W	
R1087	ERJ3GEYJ331	M 330 OHM,J,1/16W	
R1088	ERJ3GEYJ471	M 470 OHM,J,1/16W	
R1089	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	
R1090	ERJ3GEYJ103	M 10K OHM,J,1/16W	
R1091	ERJ3GEYJ331	M 330 OHM,J,1/16W	
R1092	ERJ3GEYJ103	M 10K OHM,J,1/16W	
R1093	ERJ3GEYJ103	M 10K OHM,J,1/16W	
R1094	ERJ3GEYJ101	M 100 OHM,J,1/16W	D0GB101JA002
R1095	ERJ3GEYJ101	M 100 OHM,J,1/16W	D0GB101JA002
R1098	ERJ3GEYJ103	M 10K OHM,J,1/16W	
R1100	ERJ3GEYJ223	M 22K OHM,J,1/16W	
R1102	ERJ3GEYJ103	M 10K OHM,J,1/16W	
R1103	ERJ3GEYJ101	M 100 OHM,J,1/16W	D0GB101JA002
R1104	ERJ3GEYJ101	M 100 OHM,J,1/16W	D0GB101JA002
R1105	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	
R1106	ERJ3GEYJ562	M 5.6KOHM,J,1/16W	
R1107	ERJ3GEYJ103	M 10K OHM,J,1/16W	
R1108	ERJ3GEYJ223	M 22K OHM,J,1/16W	
R1109	ERJ3GEYJ560	M 56 OHM,J,1/16W	
R1113	ERJ3GEYJ103	M 10K OHM,J,1/16W	
R1114	ERJ3GEYJ560	M 56 OHM,J,1/16W	
R1115	ERJ3GEYJ471	M 470 OHM,J,1/16W	
R1116	ERJ3GEYJ560	M 56 OHM,J,1/16W	
R1117	ERJ3GEYJ223	M 22K OHM,J,1/16W	
R1118	ERJ3GEYJ223	M 22K OHM,J,1/16W	
R1121	ERJ3GEYJ180	M 18 OHM,J,1/16W	
R1122	ERJ3GEYJ101	M 100 OHM,J,1/16W	D0GB101JA002
R1123	ERJ3GEYJ180	M 18 OHM,J,1/16W	
R1128	ERJ3GEYJ180	M 18 OHM,J,1/16W	
R1142	ERJ6ENF2001	M 2KOHM, 1/10W	
R1143	ERJ8ENF1501	M 1.5KOHM, 1/8W	
R1144	ERJ2GEJ562	M 5.6KOHM, 0.063W	
R1145	ERJ6ENF39R0	M 39 OHM, 1/10W	
R1147	ERJ3GEYJ180	M 18 OHM,J,1/16W	
R1148	ERJ6ENF2700	M 270 OHM, 1/10W	
R1151	ERJ3EKF1002	M 10K OHM, 1/16W	
R1154	ERJ3EKF3302	M 33K OHM, 1/16W	
R1155	ERJ3GEYJ180	M 18 OHM,J,1/16W	
R1156	ERJ3GEYJ180	M 18 OHM,J,1/16W	

Ref. No.	Part No.	Part Name & / Description	Remarks
R1163	ERJ3GEYJ391	M 390 OHM,J,1/16W	D0GB391JA002
R1164	ERJ3EKF1371	M 1.37KOHM,0.063W	
R1165	ERJ3GEYJ560	M 56 OHM,J,1/16W	
R1166	ERJ3GEYJ102	M 1K OHM,J,1/16W	
R1167	ERJ6ENF2001	M 2KOHM, 1/10W	
R1168	ERJ3GEYJ560	M 56 OHM,J,1/16W	
R1169	ERJ2GEJ220	M 22 OHM, 0.063W	
R1170	ERJ8ENF1501	M 1.5KOHM, 1/8W	
R1171	ERJ2GEJ562	M 5.6KOHM, 0.063W	
R1172	ERJ6ENF39R0	M 39 OHM, 1/10W	
R1173	ERJ3EKF1741	M 1.74KOHM,0.063W	
R1174	ERJ2GE0R00	M 0 OHM, 0.063W	
R1175	ERJ6ENF2700	M 270 OHM, 1/10W	
R1177	ERJ2GEJ220	M 22 OHM, 0.063W	
R1178	ERJ2GEJ220	M 22 OHM, 0.063W	
R1179	ERJ2GEJ220	M 22 OHM, 0.063W	
R1180	ERJ3GEYJ560	M 56 OHM,J,1/16W	
R1181	ERJ3EKF1002	M 10K OHM, 1/16W	
R1182	ERJ3GEYJ104	M 100KOHM,J,1/16W	
R1183	ERJ3EKF3302	M 33K OHM, 1/16W	
R1184	ERJ2GEJ220	M 22 OHM, 0.063W	
R1188	ERJ3GEYJ392	M 3.9KOHM,J,1/16W	
R1189	ERJ3GEYJ105	M 1M OHM,J,1/16W	
R1190	ERJ3GEYJ822	M 8.2KOHM,J,1/16W	
R1191	ERJ3GEYJ183	M 18K OHM,J,1/16W	
R1192	ERJ3GEYJ220	M 22 OHM,J,1/16W	
R1193	EXB28V220J	RESISTOR ARRAY	
R1194	EXB28V220J	RESISTOR ARRAY	
R1195	ERJ3GEYJ560	M 56 OHM,J,1/16W	
R1196	EXB28V560J	RESISTOR ARRAY	
R1197	ERJ2GEJ562	M 5.6KOHM, 0.063W	
R1199	ERJ6ENF2001	M 2KOHM, 1/10W	
R1200	ERJ3GEYJ330	M 33 OHM,J,1/16W	
R1201	ERJ3GEYJ103	M 10K OHM,J,1/16W	
R1202	ERJ3GEYJ183	M 18K OHM,J,1/16W	
R1203	ERJ8ENF1201	M 1.2KOHM, 1/8W	
R1204	ERJ3EKF3302	M 33K OHM, 1/16W	
R1205	ERJ6ENF39R0	M 39 OHM, 1/10W	
R1206	ERJ3GEYJ560	M 56 OHM,J,1/16W	
R1208	ERJ6ENF2702	M 27KOHM, 1/10W	
R1209	ERJ6ENF2700	M 270 OHM, 1/10W	
R1210	ERJ2GEJ562	M 5.6KOHM, 0.063W	
R1211	ERJ3EKF1002	M 10K OHM, 1/16W	
R1212	EXB28V560J	RESISTOR ARRAY	
R1213	EXB28V560J	RESISTOR ARRAY	
R1214	ERJ2GEJ220	M 22 OHM, 0.063W	
R1216	EXB28V220J	RESISTOR ARRAY	
R1217	ERJ3GEYJ182	M 1.8KOHM,J,1/16W	
R1218	ERJ3GEYJ272	M 2.7KOHM,J,1/16W	
R1219	ERJ3GEYJ182	M 1.8KOHM,J,1/16W	
R1221	ERJ3GEYJ560	M 56 OHM,J,1/16W	
R1222	ERJ6ENF2001	M 2KOHM, 1/10W	
R1223	ERJ2GEJ562	M 5.6KOHM, 0.063W	
R1224	ERJ8ENF1201	M 1.2KOHM, 1/8W	

Ref. No.	Part No.	Part Name & / Description	Remarks
R1225	ERJ3EKF3302	M 33K OHM, 1/16W	
R1226	ERJ6ENF39R0	M 39 OHM, 1/10W	
R1227	ERJ3GEYJ103	M 10K OHM,J,1/16W	
R1228	ERJ6ENF2700	M 270 OHM, 1/10W	
R1229	ERJ3EKF1002	M 10K OHM, 1/16W	
R1230	ERJ3GEYJ104	M 100KOHM,J,1/16W	
R1231	ERJ3GEYJ391	M 390 OHM,J,1/16W	D0GB391JA002
R1237	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1238	ERJ2GEJ101	M 100 OHM, 0.063W	
R1240	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1241	ERJ2GEJ220	M 22 OHM, 0.063W	
R1242	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1244	ERJ2GEJ220	M 22 OHM, 0.063W	
R1246	ERJ2GEJ681	M 680 OHM, 0.063W	
R1247	ERJ2GEJ681	M 680 OHM, 0.063W	
R1248	ERJ2GEJ103	M 10K OHM, 0.063W	LB10NTU/E
R1249	ERJ2GEJ220	M 22 OHM, 0.063W	
R1250	ERJ2GEJ220	M 22 OHM, 0.063W	
R1251	ERJ2GEJ220	M 22 OHM, 0.063W	
R1252	ERJ3GEYJ220	M 22 OHM,J,1/16W	
R1253	ERJ3GEYJ220	M 22 OHM,J,1/16W	
R1254	ERJ3GEYJ220	M 22 OHM,J,1/16W	
R1255	ERJ2GEJ101	M 100 OHM, 0.063W	
R1257	ERJ2GEJ220	M 22 OHM, 0.063W	
R1260	EXB28V220J	RESISTOR ARRAY	LB10NTU/E
R1261	EXB28V220J	RESISTOR ARRAY	LB10NTU/E
R1262	EXB28V220J	RESISTOR ARRAY	LB10NTU/E
R1263	EXB28V220J	RESISTOR ARRAY	LB10NTU/E
R1264	EXB28V220J	RESISTOR ARRAY	LB10NTU/E
R1265	EXB28V220J	RESISTOR ARRAY	LB10NTU/E
R1266	EXB28V560J	RESISTOR ARRAY	
R1268	ERJ2GEJ220	M 22 OHM, 0.063W	
R1270	EXB28V560J	RESISTOR ARRAY	
R1271	EXB28V560J	RESISTOR ARRAY	
R1272	ERJ3GEYJ102	M 1K OHM,J,1/16W	
R1273	EXB28V560J	RESISTOR ARRAY	
R1274	EXB28V560J	RESISTOR ARRAY	
R1275	EXB28V560J	RESISTOR ARRAY	
R1276	EXB28V560J	RESISTOR ARRAY	
R1277	EXB28V560J	RESISTOR ARRAY	
R1278	EXB28V560J	RESISTOR ARRAY	
R1281	ERJ2GEJ220	M 22 OHM, 0.063W	
R1282	ERJ3GEYJ681	M 680 OHM,J,1/16W	
R1285	ERJ3GEYJ220	M 22 OHM,J,1/16W	
R1290	ERJ3GEYJ301	M 300 OHM,J,1/16W	
R1291	ERJ2GEJ102	M 1K OHM, 0.063W	
R1295	ERJ6ENF1203	M 120KOHM, 1/10W	
R1298	ERJ6ENF1203	M 120KOHM, 1/10W	
R1299	ERJ3GEYJ220	M 22 OHM,J,1/16W	
R1300	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1301	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1302	ERJ2GE0R00	M 0 OHM, 0.063W	LB10NTU/E, LB10U/E, LB10VU/E
R1303	ERJ2GE0R00	M 0 OHM, 0.063W	LB10NTU/E, LB10U/E, LB10VU/E
R1304	ERJ2GEJ103	M 10K OHM, 0.063W	

Ref. No.	Part No.	Part Name & / Description	Remarks
R1305	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1306	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1308	ERJ6ENF1004	M1000KOHM, 1/10W	
R1309	ERJ2GEJ103	M 10K OHM, 0.063W	
R1310	ERJ3GEYJ220	M 22 OHM,J,1/16W	
R1311	ERJ2GEJ221	M 220 OHM, 0.063W	
R1312	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1313	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1314	ERJ2GEJ221	M 220 OHM, 0.063W	
R1315	ERJ2GEJ272	M 2.7KOHM, 0.063W	
R1321	ERJ2GEJ101	M 100 OHM, 0.063W	
R1322	ERJ2GEJ220	M 22 OHM, 0.063W	
R1323	EXB28V103J	RESISTOR ARRAY	
R1325	EXB28V103J	RESISTOR ARRAY	
R1326	ERJ2GEJ105	M 1M OHM, 0.063W	LB10NTU/E, LB10U/E
R1328	EXB28V103J	RESISTOR ARRAY	
R1331	ERJ2GEJ105	M 1M OHM, 0.063W	
R1332	EXB28V103J	RESISTOR ARRAY	
R1333	EXB28V103J	RESISTOR ARRAY	
R1334	ERJ2GEJ220	M 22 OHM, 0.063W	
R1335	ERJ2GEJ220	M 22 OHM, 0.063W	
R1336	ERJ2GEJ102	M 1K OHM, 0.063W	
R1337	ERJ2GEJ105	M 1M OHM, 0.063W	
R1338	ERJ2GEJ102	M 1K OHM, 0.063W	
R1339	ERJ2GEJ103	M 10K OHM, 0.063W	
R1340	ERJ2GEJ101	M 100 OHM, 0.063W	
R1346	ERJ2GEJ103	M 10K OHM, 0.063W	
R1348	EXB28V220J	RESISTOR ARRAY	
R1349	ERJ2GEJ220	M 22 OHM, 0.063W	
R1355	ERJ2GEJ562	M 5.6KOHM, 0.063W	
R1356	ERJ2GEJ103	M 10K OHM, 0.063W	
R1357	ERJ6GEYJ100	M 10 OHM,J,1/10W	
R1358	ERJ2GEJ562	M 5.6KOHM, 0.063W	
R1359	EXB28V220J	RESISTOR ARRAY	
R1360	ERJ6GEYJ100	M 10 OHM,J,1/10W	
R1361	EXB28V220J	RESISTOR ARRAY	
R1362	ERJ6GEYJ560	M 56 OHM,J,1/10W	
R1363	EXB28V220J	RESISTOR ARRAY	
R1364	ERJ2GEJ220	M 22 OHM, 0.063W	
R1365	ERJ6ENF6801	M 6.8KOHM, 1/10W	
R1366	ERJ3GEYJ331	M 330 OHM,J,1/16W	
R1367	ERJ3GEYJ102	M 1K OHM,J,1/16W	
R1368	ERJ2GEJ220	M 22 OHM, 0.063W	
R1370	ERJ6ENF6801	M 6.8KOHM, 1/10W	
R1372	ERJ3GEYJ102	M 1K OHM,J,1/16W	
R1373	ERJ2GEJ220	M 22 OHM, 0.063W	
R1374	EXB28V220J	RESISTOR ARRAY	
R1376	ERJ2GEJ221	M 220 OHM, 0.063W	
R1378	EXB28V220J	RESISTOR ARRAY	
R1379	ERJ2GEJ331	M 330 OHM, 0.063W	
R1380	EXB28V220J	RESISTOR ARRAY	
R1381	EXB28V102J	RESISTOR ARRAY	
R1382	EXB28V220J	RESISTOR ARRAY	
R1383	EXB28V102J	RESISTOR ARRAY	

Ref. No.	Part No.	Part Name & / Description	Remarks
R1384	EXB28V220J	RESISTOR ARRAY	
R1385	EXB28V102J	RESISTOR ARRAY	
R1386	EXB28V220J	RESISTOR ARRAY	
R1388	EXB28V220J	RESISTOR ARRAY	
R1389	EXB28V220J	RESISTOR ARRAY	
R1390	ERJ2GEJ101	M 100 OHM, 0.063W	
R1391	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1392	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1393	EXB28V220J	RESISTOR ARRAY	
R1394	EXB28V220J	RESISTOR ARRAY	
R1395	EXB28V220J	RESISTOR ARRAY	
R1396	ERJ2GEJ220	M 22 OHM, 0.063W	
R1397	ERJ2GEJ220	M 22 OHM, 0.063W	
R1398	EXB28V220J	RESISTOR ARRAY	
R1399	EXB28V220J	RESISTOR ARRAY	
R1400	EXB28V220J	RESISTOR ARRAY	
R1401	EXB28V220J	RESISTOR ARRAY	
R1402	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1403	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1404	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1405	ERJ2GEJ102	M 1K OHM, 0.063W	
R1406	ERJ2GEJ103	M 10K OHM, 0.063W	
R1407	ERJ2GEJ562	M 5.6KOHM, 0.063W	
R1408	ERJ3EKF1473	M 147KOHM, 0.063W	
R1409	ERJ3EKF1002	M 10KOHM, 1/16W	
R1410	ERJ3GEYJ331	M 330 OHM,J,1/16W	
R1411	ERJ3GEYJ331	M 330 OHM,J,1/16W	
R1412	ERJ3GEYJ331	M 330 OHM,J,1/16W	
R1416	ERJ2GEJ220	M 22 OHM, 0.063W	
R1417	ERJ2GEJ220	M 22 OHM, 0.063W	
R1418	ERJ2GEJ220	M 22 OHM, 0.063W	
R1419	ERJ2GEJ473	M 47K OHM, 0.063W	
R1420	ERJ2GEJ473	M 47K OHM, 0.063W	
R1421	ERJ2GEJ473	M 47K OHM, 0.063W	
R1422	ERJ2GEJ104	M 100KOHM, 0.063W	
R1423	ERJ2GEJ104	M 100KOHM, 0.063W	
R1424	ERJ2GEJ104	M 100KOHM, 0.063W	
R1425	ERJ2GEJ220	M 22 OHM, 0.063W	
R1426	ERJ2GEJ220	M 22 OHM, 0.063W	
R1427	ERJ3GEYJ561	M 560 OHM,J,1/16W	
R1429	ERJ3GEY0R00	M 0 OHM,J,1/16W	
R1430	ERJ1TYJ221	M 220 OHM, 1W	
R1431	ERJ1TYJ221	M 220 OHM, 1W	
R1432	ERJ2GEJ105	M 1M OHM, 0.063W	LB10VU/E
R1433	ERJ3GEY0R00	M 0 OHMJ,J1/16W	
R1434	ERJ3GEYJ272	M 2.7KOHMJ,J1/16W	
R1435	ERJ3GEYJ272	M 2.7KOHMJ,J1/16W	
R1436	ERJ3GEYJ272	M 2.7KOHMJ,J1/16W	
R1437	ERJ3GEYJ272	M 2.7KOHMJ,J1/16W	
R1438	ERJ3GEYJ272	M 2.7KOHMJ,J1/16W	
R1439	ERJ2GE0R00	M 0 OHM, 0.063W	LB10NTU/E, LB10U/E, LB10VU/E
R1440	ERJ2GE0R00	M 0 OHM, 0.063W	LB10SU/E
R1441	ERJ2GEJ104	M 100KOHM, 0.063W	
R1442	ERJ2GEJ104	M 100KOHM, 0.063W	

Ref. No.	Part No.	Part Name & / Description	Remarks
R1443	ERJ2GE0R00	M 0 OHM, 0.063W	LB10SU/E
R1444	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1445	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1446	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1447	ERJ2GEJ220	M 22 OHM, 0.063W	
R1801	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1803	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1804	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1805	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1810	ERJ3GEYJ222	M 2.2KOHM,J,1/16W	LB10NTU/E
R1812	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1814	ERJ3GEYJ560	M 560 OHM,1/16W	LB10NTU/E
R1815	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1818	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1819	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1820	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1821	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1823	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1824	ERJ3GEY0R00	M 0 OHM, 1/16W	LB10NTU/E
R1829	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1830	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1833	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1834	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1835	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1836	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1837	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1838	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1839	ERJ3GEYJ560	M 560 OHM,1/16W	LB10NTU/E
R1840	ERJ3GEY0R00	M 0 OHM, 1/16W	LB10NTU/E
R1844	ERJ3GEYJ101	M 100 OHM,J,1/16W	D0GB101JA002 (LB10NTU/E)
R1846	ERJ3GEYJ101	M 100 OHM,J,1/16W	D0GB101JA002 (LB10NTU/E)
R1854	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1860	ERJ3GEYJ105	M 1M OHM,J,1/16W	LB10NTU/E
R1861	ERJ3GEYJ100	M 100 OHM, 1/16W	LB10NTU/E
R1862	ERJ3GEY0R00	M 0 OHM, 1/16W	LB10NTU/E
R1863	ERJ3GEYJ105	M 1M OHM,J,1/16W	LB10NTU/E
R1870	ERJ3GEY0R00	M 0 OHM, 1/16W	LB10NTU/E
R1871	ERJ3GEY0R00	M 0 OHM, 1/16W	LB10NTU/E
R1872	ERJ3GEY0R00	M 0 OHM, 1/16W	LB10NTU/E
R1873	ERJ3GEY0R00	M 0 OHM, 1/16W	LB10NTU/E
R1875	ERJ3GEY0R00	M 0 OHM, 1/16W	LB10NTU/E
R1877	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R1878	ERJ3GEYJ101	M 100 OHM,J,1/16W	D0GB101JA002 (LB10NTU/E)
R1879	ERJ3GEYJ101	M 100 OHM,J,1/16W	D0GB101JA002 (LB10NTU/E)
R1894	ERJ3GEYJ103	M 10K OHM,J,1/16W	LB10NTU/E
R2001	ERJ3GEYJ100	M 10 OHM,J,1/16W	
R2002	ERJ6ENF5601	M 5.6KOHM, 1/10W	
R2003	ERJ6ENF2201	M 2.2KOHM, 1/10W	
R2004	ERJ6ENF6801	M 6.8KOHM, 1/10W	
R2005	ERJ6ENF3302	M 33KOHM, 1/10W	
R2006	ERJ3GEYJ101	M 100 OHM,J,1/16W	D0GB101JA002
R2007	ERJ3GEYJ101	M 100 OHM,J,1/16W	D0GB101JA002
R2008	ERJ3GEYJ101	M 100 OHM,J,1/16W	D0GB101JA002
R2009	ERJ3GEYJ101	M 100 OHM,J,1/16W	D0GB101JA002



Ref. No.	Part No.	Part Name & / Description	Remarks
R2010	ERJ3GEYJ101	M 100 OHM,J,1/16W	D0GB101JA002
R2011	ERJ3GEYJ331	M 330 OHM,J,1/16W	
R2012	ERJ3GEYJ331	M 330 OHM,J,1/16W	
R2013	ERJ3GEYJ331	M 330 OHM,J,1/16W	
R2014	ERJ3GEYJ331	M 330 OHM,J,1/16W	
R2015	ERJ3GEYJ331	M 330 OHM,J,1/16W	
R2016	ERJ6GEYJ470	M 47 OHM,J,1/10W	
R2017	ERJ3GEYJ102	M 1K OHM,J,1/16W	
R2019	ERJ3GEY0R00	M 0 OHM,J,1/16W	
R3001	ERJ3GEYJ100	M 10 OHM,J,1/16W	
R3002	ERJ6ENF5601	M 5.6KOHM, 1/10W	
R3003	ERJ6ENF3302	M 33KOHM, 1/10W	
R3004	ERJ6ENF1002	M 10KOHM, 1/10W	
R3005	ERJ3GEYJ100	M 10 OHM,J,1/16W	
R3006	ERJ6ENF1002	M 10KOHM, 1/10W	
R3007	ERJ6ENF2201	M 2.2KOHM, 1/10W	
R3008	ERJ6ENF1001	M 1KOHM, 1/10W	
R3009	ERJ6ENF2201	M 2.2KOHM, 1/10W	
R3010	ERJ6ENF1001	M 1KOHM, 1/10W	
R3011	ERJ6ENF2201	M 2.2KOHM, 1/10W	
R3012	ERJ6ENF1003	M 100KOHM, 1/10W	
R9101	ERDS1TJ474	C 4.7KOHM, J,1/2W	
R9102	D0A1825JA015	RESISTOR	
R9601	ERX2SJR47	M 0.47OHM,J, 2W	
R9630	ERJ14YJ3R3	M 3.3 OHM,J, 1/4W	
R9631	ERJ8GEYJ220	M 22 OHM,J, 1/8W	
R9632	ERJ14YJ5R6	M 5.6 OHM,J, 1/4W	
R9633	ERJ8GEYJ100	M 10 OHM,J, 1/8W	
R9634	ERJ8GEYJ120	M 12 OHM,J, 1/8W	
R9636	ERJ14YJ3R3	M 3.3 OHM,J, 1/4W	
R9637	ERJ8GEYJ220	M 22 OHM,J, 1/8W	
R9638	ERJ14YJ5R6	M 5.6 OHM,J, 1/4W	
R9639	ERJ8GEYJ100	M 10 OHM,J, 1/8W	
R9640	ERJ8GEYJ120	M 12 OHM,J, 1/8W	
R9653	D0XGR22KA001	RESISTOR	
[CAPACITORS]			
C1001	EEVHB0J221U	E 220UF, 6.3V	
C1002	ECJ0EB1C103K	C 0.01UF, 16V	
C1003	EEVHB0J221U	E 220UF, 6.3V	
C1004	ECJ0EB1C103K	C 0.01UF, 16V	
C1005	EEVHB0J221U	E 220UF, 6.3V	
C1006	ECJ0EB1C103K	C 0.01UF, 16V	
C1007	ECJ0EF1C104Z	C 0.1UF, 16V	
C1008	ECJ1XB1H472K	C 4700PF, K, 50V	
C1009	ECJ2XF1C105Z	C 1UF, Z, 16V	
C1010	EEVHB0J330	E 33UF, 6.3V	
C1011	ECJ0EF1C104Z	C 0.1UF, 16V	
C1012	EEVHB0J330	E 33UF, 6.3V	
C1013	EEVHB1A101	E 100UF, 10V	
C1014	ECJ0EF1C104Z	C 0.1UF, 16V	
C1015	ECJ0EF1C104Z	C 0.1UF, 16V	
C1016	ECJ0EB1C103K	C 0.01UF, 16V	

State	Environment	Structure, etc.	
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Ref. No.	Part No.	Part Name & / Description	Remarks
C1017	ECJ0EF1C104Z	C 0.1UF, 16V	
C1018	ECJ0EB1C103K	C 0.01UF, 16V	
C1019	ECJ1XC1H102J	C 1000PF, J, 50V	
C1020	ECUX1H120JCV	C 12PF, 50V	
C1021	ECJ0EF1C104Z	C 0.1UF, 16V	
C1022	ECJ0EB1C103K	C 0.01UF, 16V	
C1023	ECJ0EB1C103K	C 0.01UF, 16V	
C1024	EEVHB1C470	E 47UF, 16V	
C1025	ECUX1H270JCV	C 27PF, 50V	
C1026	ECUX1H120JCV	C 12PF, 50V	
C1027	ECJ1XF1A105Z	C 100UF, 10V	
C1028	ECUX1H270JCV	C 27PF, 50V	
C1029	ECJ0EF1C104Z	C 0.1UF, 16V	
C1032	ECJ0EF1C104Z	C 0.1UF, 16V	
C1033	ECJ1XF1A105Z	C 100UF, 10V	
C1034	EEVHB0J470	E 47UF, 6.3V	
C1035	ECJ1XF1A105Z	C 100UF, 10V	
C1036	ECJ0EB1C103K	C 0.01UF, 16V	
C1037	ECJ0EB1C103K	C 0.01UF, 16V	
C1038	ECJ0EB1C103K	C 0.01UF, 16V	
C1039	ECJ1XF1A105Z	C 100UF, 10V	
C1040	ECJ1XF1A105Z	C 100UF, 10V	
C1041	ECJ1XF1A105Z	C 100UF, 10V	
C1042	ECJ1XF1A105Z	C 100UF, 10V	
C1043	ECJ1XF1A105Z	C 100UF, 10V	
C1044	ECJ1XF1A105Z	C 100UF, 10V	
C1047	ECJ2XF1C225Z	C 2.2UF, Z, 16V	
C1049	ECJ2XF1C225Z	C 2.2UF, Z, 16V	
C1050	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1051	ECJ1XF1A105Z	C 100UF, 10V	
C1052	ECJ1XF1A105Z	C 100UF, 10V	
C1053	ECJ1XF1A105Z	C 100UF, 10V	
C1054	ECJ0EF1C104Z	C 0.1UF, 16V	
C1058	EEVHB0J470	E 47UF, 6.3V	
C1061	ECJ0EF1C104Z	C 0.1UF, 16V	
C1062	EEVHB0J330	E 33UF, 6.3V	
C1072	EEVHB1C470	E 47UF, 16V	
C1075	EEVHB1C100	E 10UF, 16V	
C1076	ECJ3XB0J106M	C 10UF, 6.3V	
C1077	ECJ0EF1C104Z	C 0.1UF, 16V	
C1078	ECJ0EF1C104Z	C 0.1UF, 16V	
C1079	ECJ0EB1C103K	C 0.01UF, 16V	
C1080	ECJ3XB0J106M	C 10UF, 6.3V	
C1081	EEVHB1C100	E 10UF, 16V	
C1082	ECJ0EF1C104Z	C 0.1UF, 16V	
C1083	ECJ0EF1C104Z	C 0.1UF, 16V	
C1084	ECJ2XF1C225Z	C 2.2UF, Z, 16V	
C1085	ECJ0EF1C104Z	C 0.1UF, 16V	
C1086	ECJ0EB1C103K	C 0.01UF, 16V	
C1087	ECJ0EF1C104Z	C 0.1UF, 16V	
C1088	ECJ0EF1C104Z	C 0.1UF, 16V	
C1089	ECJ0EF1C104Z	C 0.1UF, 16V	
C1090	ECJ0EF1C104Z	C 0.1UF, 16V	
C1091	ECJ0EF1C104Z	C 0.1UF, 16V	

Ref. No.	Part No.	Part Name & / Description	Remarks
C1092	ECJ0EF1C104Z	C 0.1UF, 16V	
C1093	ECJ1XC1H102J	C 1000PF, J, 50V	
C1094	EEVHB0G101	E 100UF, 4V	
C1095	ECJ0EF1C104Z	C 0.1UF, 16V	
C1096	ECJ0EF1C104Z	C 0.1UF, 16V	
C1097	ECJ0EF1C104Z	C 0.1UF, 16V	
C1098	ECJ0EF1C104Z	C 0.1UF, 16V	
C1099	ECJ0EF1C104Z	C 0.1UF, 16V	
C1100	ECJ1XC1H151J	C 150PF, 50V	
C1101	EEVHB1C100	E 10UF, 16V	
C1102	ECJ0EF1C104Z	C 0.1UF, 16V	
C1103	EEVHB0J101	E 100UF, 6.3V	EEVHB0J101P
C1104	EEVHB1C470	E 47UF, 16V	
C1107	ECJ0EF1C104Z	C 0.1UF, 16V	
C1108	ECJ0EF1C104Z	C 0.1UF, 16V	
C1109	ECUV1C823KBV	C 0.082PF, 16V	ECJ1VB1C823K
C1110	ECUX1H822KBV	C 8200PF, 50V	ECJ1XB1H822K
C1111	ECJ2XF1C105Z	C 1UF, Z, 16V	
C1113	ECJ0EB1C103K	C 0.01UF, 16V	
C1114	ECJ0EF1C104Z	C 0.1UF, 16V	
C1116	ECJ1XB1H472K	C 4700PF, K, 50V	
C1117	ECJ0EB1C103K	C 0.01UF, 16V	
C1118	ECJ3XF1C475Z	C 4.7UF, Z, 16V	
C1119	ECJ3XF1C475Z	C 4.7UF, Z, 16V	
C1120	ECJ3XF1C475Z	C 4.7UF, Z, 16V	
C1121	ECJ0EF1C104Z	C 0.1UF, 16V	
C1122	ECJ1XC1H150J	C 150PF, 50V	
C1123	ECJ0EF1C104Z	C 0.1UF, 16V	
C1124	ECJ1XC1H221J	C 220PF, 50V	
C1125	ECJ0EF1C104Z	C 0.1UF, 16V	
C1126	ECJ1XC1H150J	C 150PF, 50V	
C1127	ECJ0EF1C104Z	C 0.1UF, 16V	
C1128	EEFUD0J101R	CAPACITOR	
C1129	ECJ2XC1H391J	C 390PF, J, 50V	
C1130	EEVHB1C100	E 10UF, 16V	
C1131	ECJ0EF1C104Z	C 0.1UF, 16V	
C1132	ECJ0EF1C104Z	C 0.1UF, 16V	
C1133	ECJ0EF1C104Z	C 0.1UF, 16V	
C1134	ECJ1XC1H181J	C 180PF, J, 50V	
C1135	ECJ0EF1C104Z	C 0.1UF, 16V	
C1136	ECJ1XF1A105Z	C 100UF, 10V	
C1137	EEVHB0G101	E 100UF, 4V	
C1138	ECJ0EF1C104Z	C 0.1UF, 16V	
C1139	ECJ0EF1C104Z	C 0.1UF, 16V	
C1140	ECJ0EF1C104Z	C 0.1UF, 16V	
C1141	ECJ2XF1C225Z	C 2.2UF, Z, 16V	
C1142	EEVHB0J101	E 100UF, 6.3V	EEVHB0J101P
C1143	EEVHB1C470	E 47UF, 16V	
C1145	ECJ0EF1C104Z	C 0.1UF, 16V	
C1146	EEVHB1C470	E 47UF, 16V	
C1147	ECJ3XF1C475Z	C 4.7UF, Z, 16V	
C1149	ECJ0EF1C104Z	C 0.1UF, 16V	
C1150	ECJ0EF1C104Z	C 0.1UF, 16V	
C1152	ECJ0EF1C104Z	C 0.1UF, 16V	






Ref. No.	Part No.	Part Name & / Description	Remarks
C1154	ECJ0EF1C104Z	C 0.1UF, 16V	
C1155	ECJ1XF1C104Z	C 0.1UF, Z, 16V	
C1156	ECJ1XF1A105Z	C 100UF, 10V	
C1157	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1158	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1159	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1160	EEVHB0J470	E 47UF, 6.3V	LB10NTU/E
C1161	ECJ2XF1C105Z	C 1UF, Z, 16V	
C1162	ECJ0EF1C104Z	C 0.1UF, 16V	
C1163	ECJ0EF1C104Z	C 0.1UF, 16V	
C1164	ECJ0EF1C104Z	C 0.1UF, 16V	
C1165	ECJ0EF1C104Z	C 0.1UF, 16V	
C1166	ECJ0EF1C104Z	C 0.1UF, 16V	
C1167	ECJ0EF1C104Z	C 0.1UF, 16V	
C1168	ECJ0EF1C104Z	C 0.1UF, 16V	
C1169	ECJ0EF1C104Z	C 0.1UF, 16V	
C1170	ECJ0EF1C104Z	C 0.1UF, 16V	
C1171	ECJ0EF1C104Z	C 0.1UF, 16V	
C1172	ECJ0EF1C104Z	C 0.1UF, 16V	
C1173	ECJ0EF1C104Z	C 0.1UF, 16V	
C1174	ECJ0EF1C104Z	C 0.1UF, 16V	
C1175	ECJ0EF1C104Z	C 0.1UF, 16V	
C1176	ECJ0EF1C104Z	C 0.1UF, 16V	
C1177	ECJ0EF1C104Z	C 0.1UF, 16V	
C1178	ECJ0EF1C104Z	C 0.1UF, 16V	
C1179	ECJ0EF1C104Z	C 0.1UF, 16V	
C1180	ECJ0EF1C104Z	C 0.1UF, 16V	
C1181	ECJ0EF1C104Z	C 0.1UF, 16V	
C1182	ECJ0EF1C104Z	C 0.1UF, 16V	
C1183	ECJ0EF1C104Z	C 0.1UF, 16V	
C1184	ECJ0EF1C104Z	C 0.1UF, 16V	
C1185	ECJ0EF1C104Z	C 0.1UF, 16V	
C1186	ECJ0EF1C104Z	C 0.1UF, 16V	
C1187	EEVHB0J470	E 47UF, 6.3V	
C1188	ECJ0EF1C104Z	C 0.1UF, 16V	
C1189	ECJ0EF1C104Z	C 0.1UF, 16V	
C1190	ECJ0EF1C104Z	C 0.1UF, 16V	
C1191	ECJ0EF1C104Z	C 0.1UF, 16V	
C1192	ECJ0EF1C104Z	C 0.1UF, 16V	
C1193	ECJ0EF1C104Z	C 0.1UF, 16V	
C1194	ECJ0EF1C104Z	C 0.1UF, 16V	
C1195	ECJ0EF1C104Z	C 0.1UF, 16V	
C1196	ECJ0EF1C104Z	C 0.1UF, 16V	
C1197	ECJ0EF1C104Z	C 0.1UF, 16V	
C1198	ECJ0EF1C104Z	C 0.1UF, 16V	
C1199	EEVHB0J470	E 47UF, 6.3V	
C1200	ECJ1XF1A105Z	C 100UF, 10V	
C1201	ECJ1XF1A105Z	C 100UF, 10V	
C1202	ECJ0EF1C104Z	C 0.1UF, 16V	
C1203	ECJ0EF1C104Z	C 0.1UF, 16V	
C1204	ECJ0EF1C104Z	C 0.1UF, 16V	
C1206	ECJ0EF1C104Z	C 0.1UF, 16V	
C1207	ECJ0EF1C104Z	C 0.1UF, 16V	
C1208	ECJ0EF1C104Z	C 0.1UF, 16V	


Ref. No.	Part No.	Part Name & / Description	Remarks
C1209	ECJ0EF1C104Z	C 0.1UF, 16V	
C1210	ECJ1XF1H333Z	C 0.033UF, 50V	
C1212	ECJ0EF1C104Z	C 0.1UF, 16V	
C1213	ECJ0EF1C104Z	C 0.1UF, 16V	
C1214	ECJ0EF1C104Z	C 0.1UF, 16V	
C1215	ECJ0EF1C104Z	C 0.1UF, 16V	
C1216	ECJ0EF1C104Z	C 0.1UF, 16V	
C1217	ECJ1XC1H471J	C 470PF, J, 50V	
C1218	ECJ0EF1C104Z	C 0.1UF, 16V	
C1219	ECJ1XC1H100C	C 10PF, 50V	
C1220	ECJ0EF1C104Z	C 0.1UF, 16V	
C1221	ECJ1XC1H100C	C 10PF, 50V	
C1222	ECJ0EF1C104Z	C 0.1UF, 16V	
C1223	ECJ0EF1C104Z	C 0.1UF, 16V	
C1224	EEVHB0J470	E 47UF, 6.3V	
C1225	ECJ0EF1C104Z	C 0.1UF, 16V	
C1228	EEVHB0J330	E 33UF, 6.3V	
C1229	ECJ0EF1C104Z	C 0.1UF, 16V	
C1230	EEVHB0G101	E 100UF, 4V	
C1232	ECJ0EF1C104Z	C 0.1UF, 16V	
C1233	ECJ0EF1C104Z	C 0.1UF, 16V	
C1234	ECJ0EF1C104Z	C 0.1UF, 16V	
C1235	ECJ0EF1C104Z	C 0.1UF, 16V	
C1236	ECJ0EF1C104Z	C 0.1UF, 16V	
C1237	ECJ0EF1C104Z	C 0.1UF, 16V	
C1238	ECJ0EF1C104Z	C 0.1UF, 16V	
C1239	ECJ0EF1C104Z	C 0.1UF, 16V	
C1240	ECJ0EF1C104Z	C 0.1UF, 16V	
C1241	ECJ0EF1C104Z	C 0.1UF, 16V	
C1242	ECJ0EF1C104Z	C 0.1UF, 16V	
C1243	ECJ0EF1C104Z	C 0.1UF, 16V	
C1244	ECJ0EF1C104Z	C 0.1UF, 16V	
C1245	ECJ0EF1C104Z	C 0.1UF, 16V	
C1246	ECJ0EF1C104Z	C 0.1UF, 16V	
C1247	ECJ0EF1C104Z	C 0.1UF, 16V	
C1248	ECJ0EF1C104Z	C 0.1UF, 16V	
C1249	ECJ0EF1C104Z	C 0.1UF, 16V	
C1250	ECJ0EF1C104Z	C 0.1UF, 16V	
C1251	ECJ0EF1C104Z	C 0.1UF, 16V	
C1252	ECJ0EF1C104Z	C 0.1UF, 16V	
C1253	ECJ0EF1C104Z	C 0.1UF, 16V	
C1254	ECJ0EF1C104Z	C 0.1UF, 16V	
C1255	ECJ0EF1C104Z	C 0.1UF, 16V	
C1256	ECJ0EF1C104Z	C 0.1UF, 16V	
C1257	ECJ0EF1C104Z	C 0.1UF, 16V	
C1258	ECJ0EF1C104Z	C 0.1UF, 16V	
C1259	ECJ0EF1C104Z	C 0.1UF, 16V	
C1260	ECJ0EF1C104Z	C 0.1UF, 16V	
C1261	ECJ0EF1C104Z	C 0.1UF, 16V	
C1262	ECJ0EF1C104Z	C 0.1UF, 16V	
C1263	ECJ0EF1C104Z	C 0.1UF, 16V	
C1264	ECJ0EF1C104Z	C 0.1UF, 16V	
C1265	ECJ0EF1C104Z	C 0.1UF, 16V	
C1266	ECJ0EF1C104Z	C 0.1UF, 16V	

Ref. No.	Part No.	Part Name & / Description	Remarks
C1267	EEVHB1E4R7	E 4.7UF, 25V	
C1268	EEVHB1E4R7	E 4.7UF, 25V	
C1269	EEVHB1A221	E 220UF, 10V	
C1270	EEVHB0J101	E 100UF, 6.3V	EEVHB0J101P
C1271	EEVHB0J101	E 100UF, 6.3V	EEVHB0J101P
C1272	EEVHB0J470	E 47UF, 6.3V	
C1273	ECJ0EF1C104Z	C 0.1UF, 16V	
C1274	ECJ0EF1C104Z	C 0.1UF, 16V	
C1275	ECJ0EF1C104Z	C 0.1UF, 16V	
C1276	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1277	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1278	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1279	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1280	EEVHB1E330	E 33UF, 25V	
C1281	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1282	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1283	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1284	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1285	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1286	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1287	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1288	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1289	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1290	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1291	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1292	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1293	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1294	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1295	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1296	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1297	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1298	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1299	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1300	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1301	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1304	EEVHB1E330	E 33UF, 25V	
C1306	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1307	ECJ0EF1C104Z	C 0.1UF, 16V	
C1308	ECJ0EF1C104Z	C 0.1UF, 16V	
C1309	ECJ0EF1C104Z	C 0.1UF, 16V	
C1310	ECJ0EF1C104Z	C 0.1UF, 16V	
C1311	ECJ0EF1C104Z	C 0.1UF, 16V	
C1312	ECJ0EF1C104Z	C 0.1UF, 16V	
C1313	ECJ0EF1C104Z	C 0.1UF, 16V	
C1314	ECJ0EF1C104Z	C 0.1UF, 16V	
C1315	ECJ0EF1C104Z	C 0.1UF, 16V	
C1316	ECJ0EF1C104Z	C 0.1UF, 16V	
C1317	ECJ0EF1C104Z	C 0.1UF, 16V	
C1318	ECJ0EF1C104Z	C 0.1UF, 16V	
C1319	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1320	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1321	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1322	EEVHB1E4R7	E 4.7UF, 25V	
C1323	ECJ0EF1C104Z	C 0.1UF, 16V	

Ref. No.	Part No.	Part Name & / Description	Remarks
C1324	ECJ0EF1C104Z	C 0.1UF, 16V	
C1325	ECJ0EF1C104Z	C 0.1UF, 16V	
C1326	ECJ0EF1C104Z	C 0.1UF, 16V	
C1327	ECJ0EF1C104Z	C 0.1UF, 16V	
C1328	ECJ0EF1C104Z	C 0.1UF, 16V	
C1329	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1330	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1331	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1332	F2G1E3300022	CAPACITOR	
C1333	EEVHB1E330	E 33UF, 25V	
C1334	EEVHB1E330	E 33UF, 25V	
C1335	EEVHB1A330	E 33UF, 10V	
C1336	F2G1A3300022	CAPACITOR	
C1337	EEVHB1A330	E 33UF, 10V	
C1341	ECJ2XF1C105Z	C 1UF, Z, 16V	
C1342	ECJ2XF1C105Z	C 1UF, Z, 16V	
C1343	ECJ2XF1C105Z	C 1UF, Z, 16V	
C1344	ECJ0EF1C104Z	C 0.1UF, 16V	LB10NTU/E
C1345	ECJ0EF1C104Z	C 0.1UF, 16V	
C1346	ECJ0EF1C104Z	C 0.1UF, 16V	
C1347	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1351	ECJ1XF1C104Z	C 0.1UF, Z, 16V / (WL-PCB)	LB10NTU/E
C1353	F4D272750002	CAPACITOR	
C1354	ECJ1XF1C104Z	C 0.1UF, Z, 16V / (WL-PCB)	LB10NTU/E
C1354	F4D272750002	CAPACITOR	
C1355	F4D272750002	CAPACITOR	
C1356	ECJ1XF1C104Z	C 0.1UF, Z, 16V / (WL-PCB)	LB10NTU/E
C1356	F4D272750002	CAPACITOR	
C1357	F4D272750002	CAPACITOR	
C1360	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1539	EEVHB1E330	E 33UF, 25V	
C1801	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1805	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1806	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1807	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1808	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1813	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1814	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1815	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1816	F2G0J4700024	CAPACITOR	LB10NTU/E
C1817	F2G0J4700024	CAPACITOR	LB10NTU/E
C1818	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1819	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1820	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1824	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1825	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1830	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1837	F2G0J4700024	CAPACITOR	LB10NTU/E
C1843	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C2001	EEVHB0J470	E 47UF, 6.3V	
C2002	ECJ1XF1C104Z	C 0.1UF, Z, 16V	
C2003	ECJ0EF1C104Z	C 0.1UF, 16V	
C2004	EEVHB0J470	E 47UF, 6.3V	
C3001	EEVHB0J330	E 33UF, 6.3V	



Ref. No.	Part No.	Part Name & / Description	Remarks
C3002	ECJ1XF1C104Z	C 0.1UF, Z, 16V	
C3003	ECJ1XF1C104Z	C 0.1UF, Z, 16V	
C9101	ECQU2A334MLA	CAPACITOR	
C9102	F1BAH1020016	CAPACITOR	
C9103	F1BAH1020016	CAPACITOR	
C9603	F0CZZ4740002	CAPACITOR	
C9610	F0C2E1050002	CAPACITOR	
C9617	F0C3C4720003	CAPACITOR	
C9618	F0C2J1540004	CAPACITOR	
C9619	F0C2J1540004	CAPACITOR	
[OTHERS]			
A1	K1MN30B00115	30P CONNECTOR	
A2	K1MN30B00114	30P CONNECTOR	
A3	K1MN30B00115	30P CONNECTOR	
A4	K1KA05B00153	5P CONNECTOR	
A6	K1KA12B00079	12P CONNECTOR	
A8	TJSF21710	10P CONNECTOR	K1MN10B00060
A9	K1KB05A00027	5P CONNECTOR	
A10	K1KA02B00051	2P CONNECTOR	
A13	K1KB21A00007	21P CONNECTOR	LB10NTU/E
A14	K1KB21A00007	21P CONNECTOR	LB10NTU/E
A15	TJS6A8780	3P CONNECTOR	K1KA03B00006
A16	K1KA03B00098	3P CONNECTOR	
A17	TJS6A8780	3P CONNECTOR	K1KA03B00006
A18	K1KA03B00098	3P CONNECTOR	
A19	K1KA04B00007	4P CONNECTOR	
S1	K1MN10B00116	10P CONNECTOR	
S2	K1KA05B00150	5P CONNECTOR	
WL4	K1KA21A00006	21P CONNECTOR	LB10NTU/E
WL5	K1KA21A00006	21P CONNECTOR	LB10NTU/E
CF2001	D4CC1103A037	THERMISTOR	
DL1001	J0HABC000011	FILTER	
DL1002	J0HABC000011	FILTER	
DL1003	J0HABC000011	FILTER	
F9101-1	EYF52BCY	FUSE HOLDER	
F9101-2	EYF52BCY	FUSE HOLDER	
JK1001	K1CB205B0003	S-VIDEO/VIDEO IN / TERMINAL	
JK1002	K2EZ8B000002	RS232C I/F TERMINAL	
JK1004	K1FB115B0098	RGB IN TERMINAL	
JK1005	K1FB115B0079	RGB OUT TERMINAL	
JK1009	K2HA202B0025	AUDIO IN TERMINAL	
JK1802	K1NA50E00027	PC CARD CONNECTOR	LB10NTU/E
JK9101	K2AH3B000020	AC INLET	
RM2001	B3RAD0000058	REMOTE CONTROL / RECEIVER	
S9602	A9BZ00000010	SPARK GAP	
SW2001	EVQPLHA15	SWITCH	
SW2002	EVQPLHA15	SWITCH	
SW2003	EVQPLHA15	SWITCH	
SW3001	EVQPLHA15	SWITCH	
SW3002	EVQWHA50K	SWITCH	
SW9601	T115AR3U3	SWITCH	

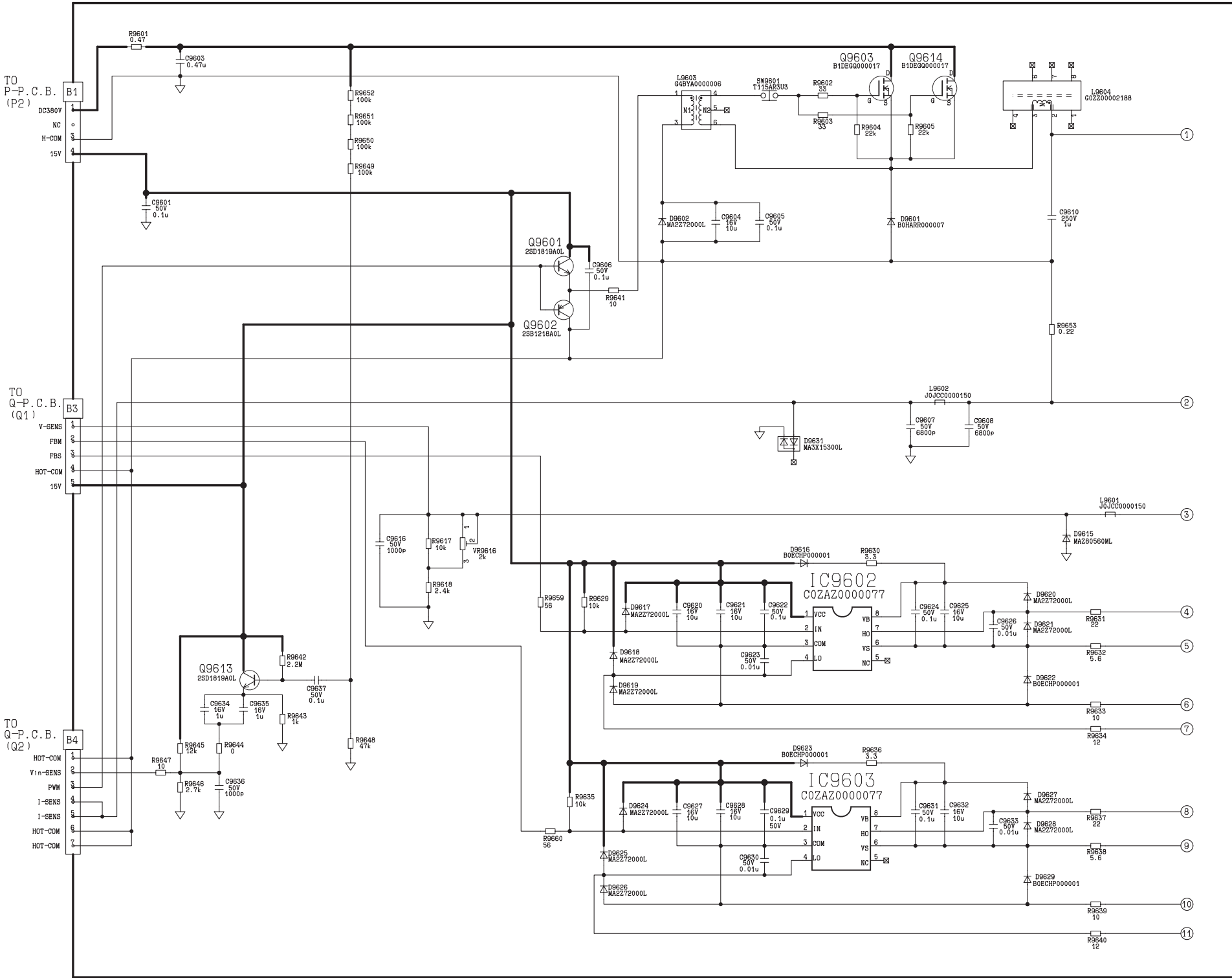
Ref. No.	Part No.	Part Name & / Description	Remarks
T9604	G4F2A0000001	TRANS	
X1002	H0J270500045	CRYSTAL	
X1003	H0J983400016	CRYSTAL	
X1006	H1A6505B0006	CRYSTAL	LB10NTU/E, LB10U/E, LB10VU/E
	H1A4405B0009	CRYSTAL	LB10SU/E
X1801	H1A6005B0011	CRYSTAL	LB10NTU/E
ZA9101	TJC6137	EARTH LUG	
RTL	TXANP03VJW5	CIRCUIT BOARD K	
RTL	TNPA3143	CIRCUIT BOARD WL	LB10NTU/E
RTL	TXANP01PVMZ	CIRCUIT BOARD A	LB10NTU/E
	TXANP01PVNZ	CIRCUIT BOARD A	LB10U/E
	TXANP01PVPZ	CIRCUIT BOARD A	LB10VU/E
	TXANP01PXAZ	CIRCUIT BOARD A	LB10SU/E
RTL	TNPA3145	CIRCUIT BOARD S2	
RTL	TNPA3144	CIRCUIT BOARD S1	
	TXANP02VJW5	POWER UNIT ASSY	
	TXANP05VJW5	BALLAST UNIT ASSY	

**17. Schematic Diagram for printing with A4 size**

**18. PDF for Printing**

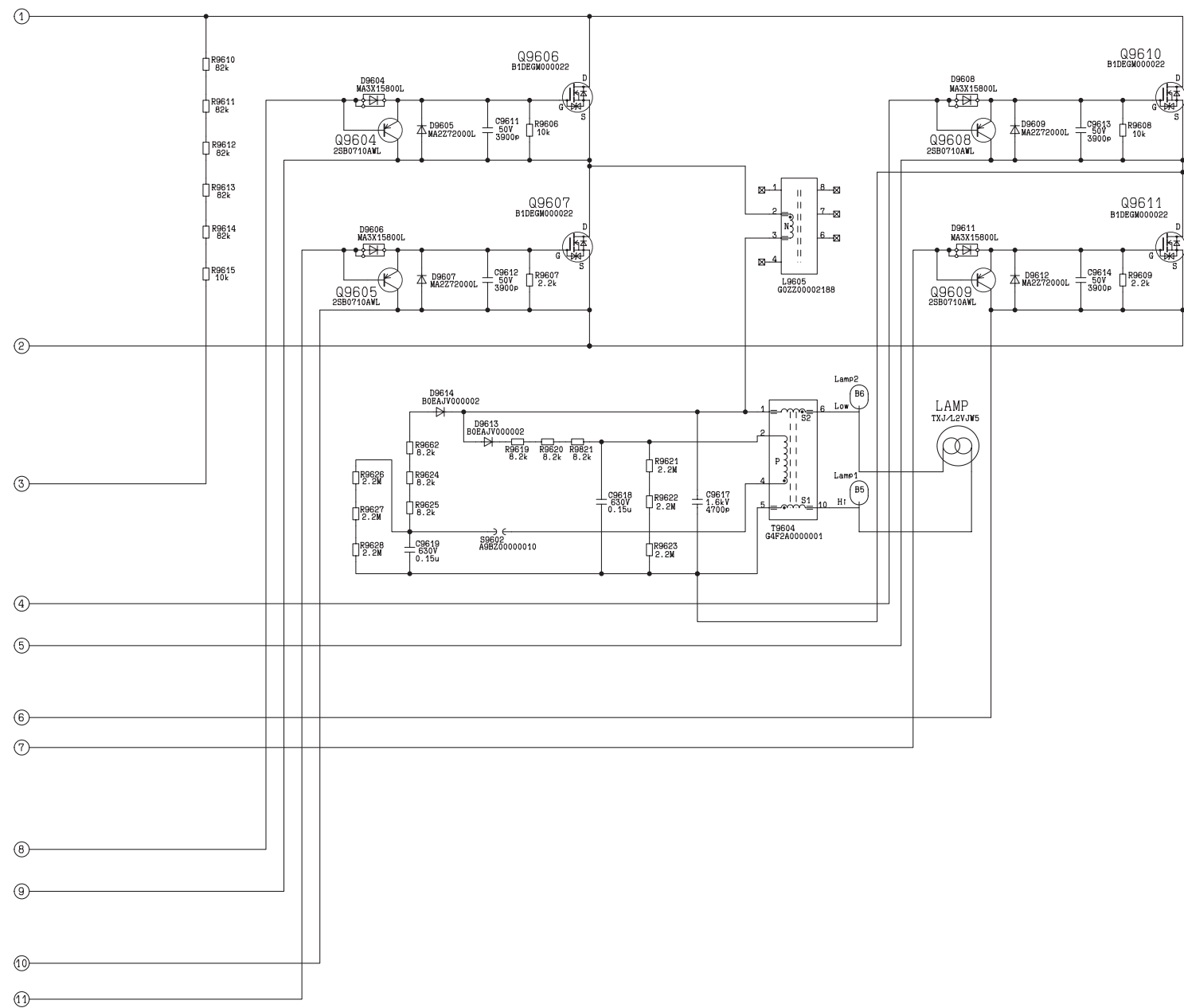
B-Module TXANP05VJW5 (1/2) Module Replacement

Only supplied components IC9602-03, Q9603-11, Q9614, D9601, D9604-09, D9611-12, D9616-29, R9601, R9630-34, R9636-40, R9653, C9603, C9610, C9617-19, T9604, SW9601, S9602, TXJ/L2VJW5



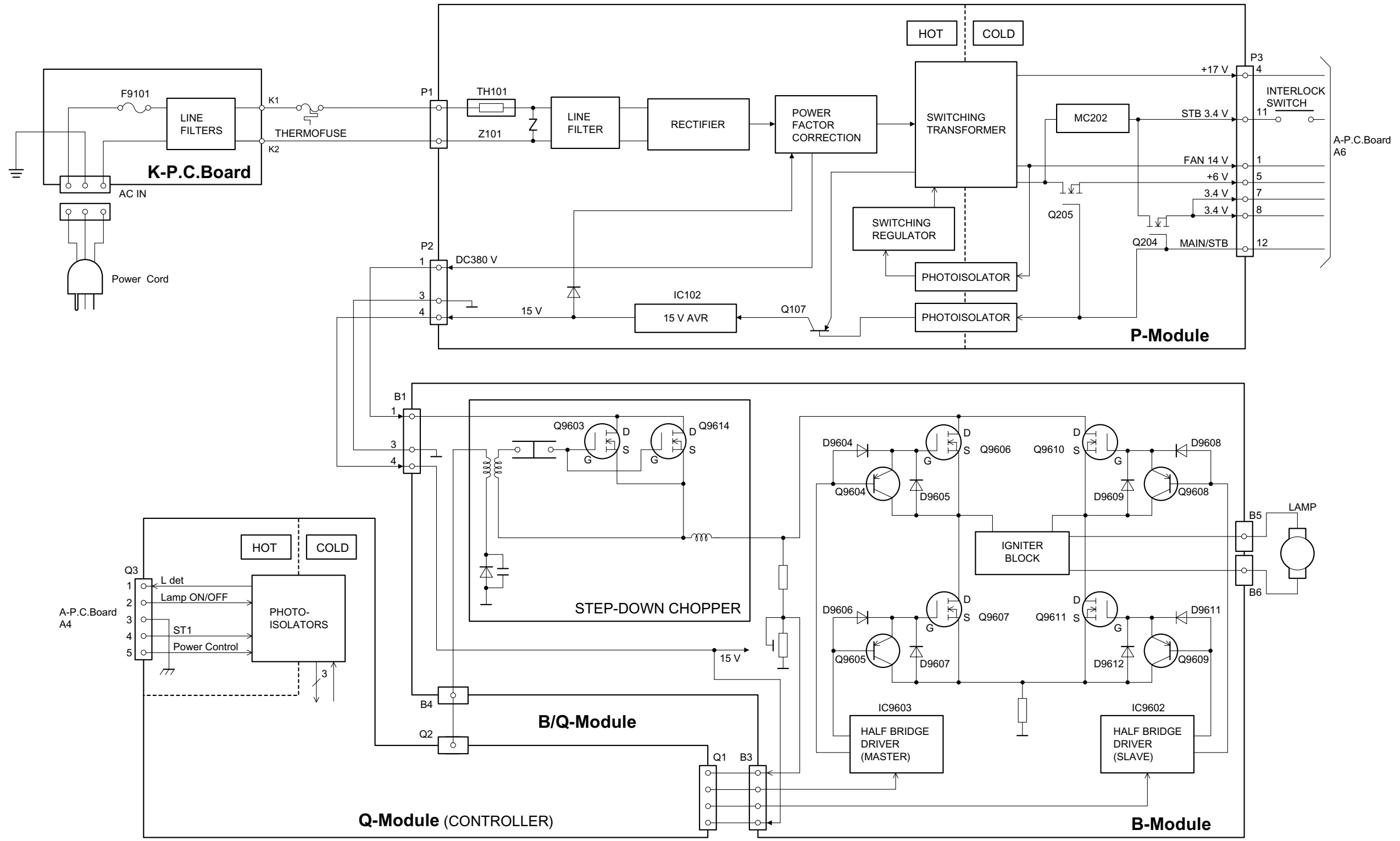
B-Module TXANP05VJW5 (2/2) Module Replacement

Only supplied components IC9602-03, Q9603-11, Q9614, D9601, D9604-09, D9611-12, D9616-29, R9601, R9630-34, R9636-40, R9653, C9603, C9610, C9617-19, T9604, SW9601, S9602, TXJ/L2VJW5



Power Supply

F  
E  
D  
C  
B  
A



1 2 3 4 5 6 7 8 9

F

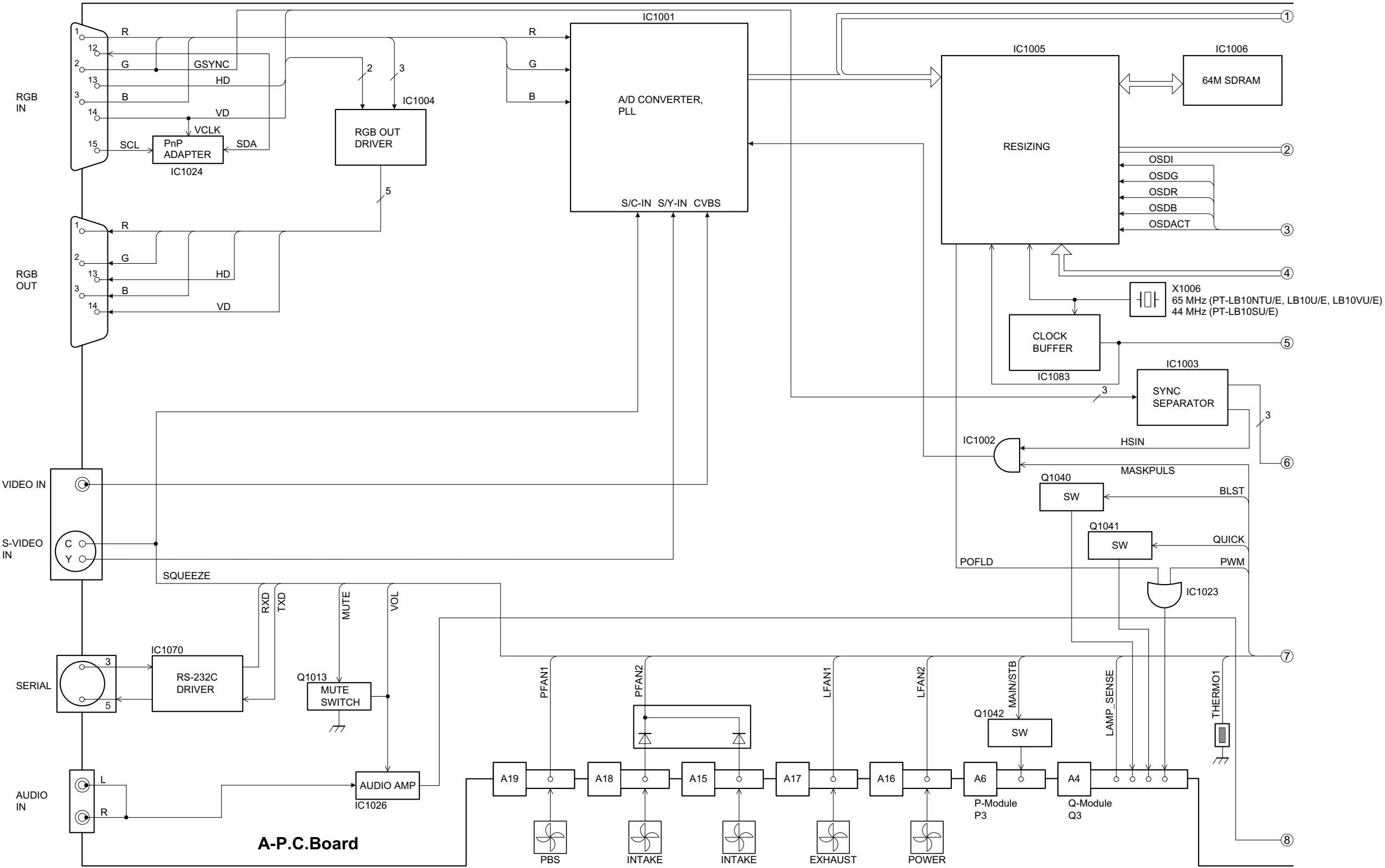
E

D

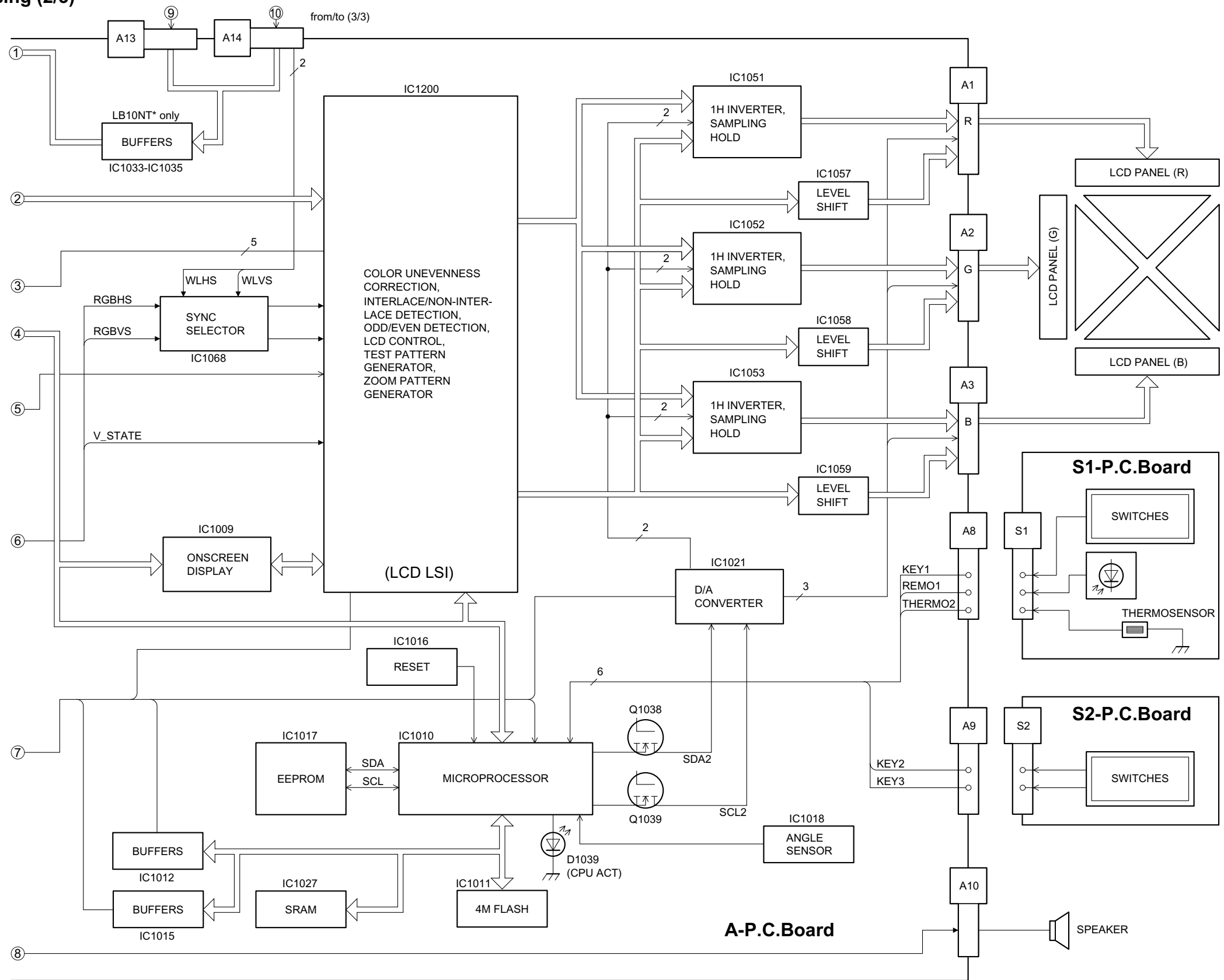
C

B

A

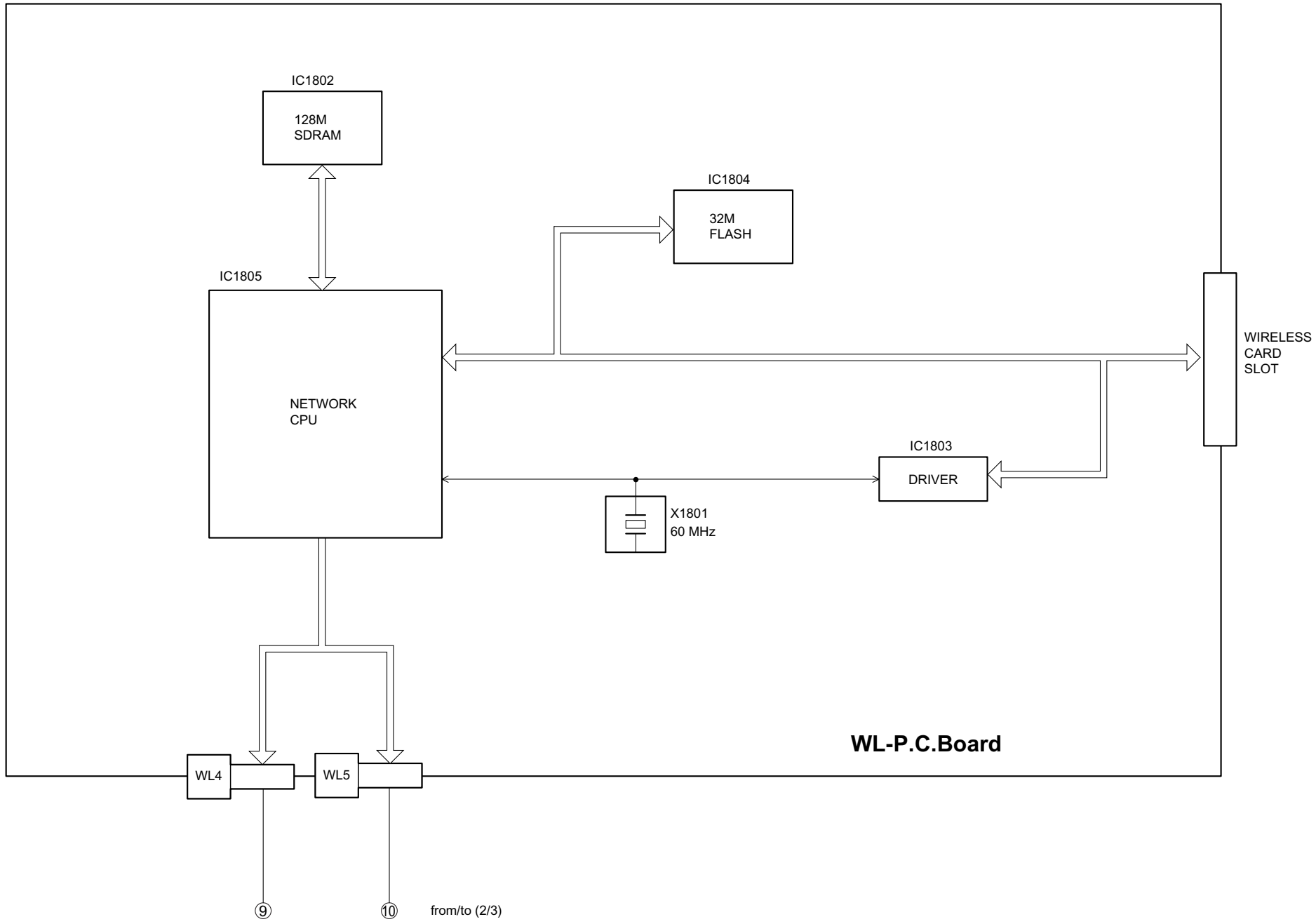


## Signal Processing (2/3)



F  
E  
D  
C  
B  
A

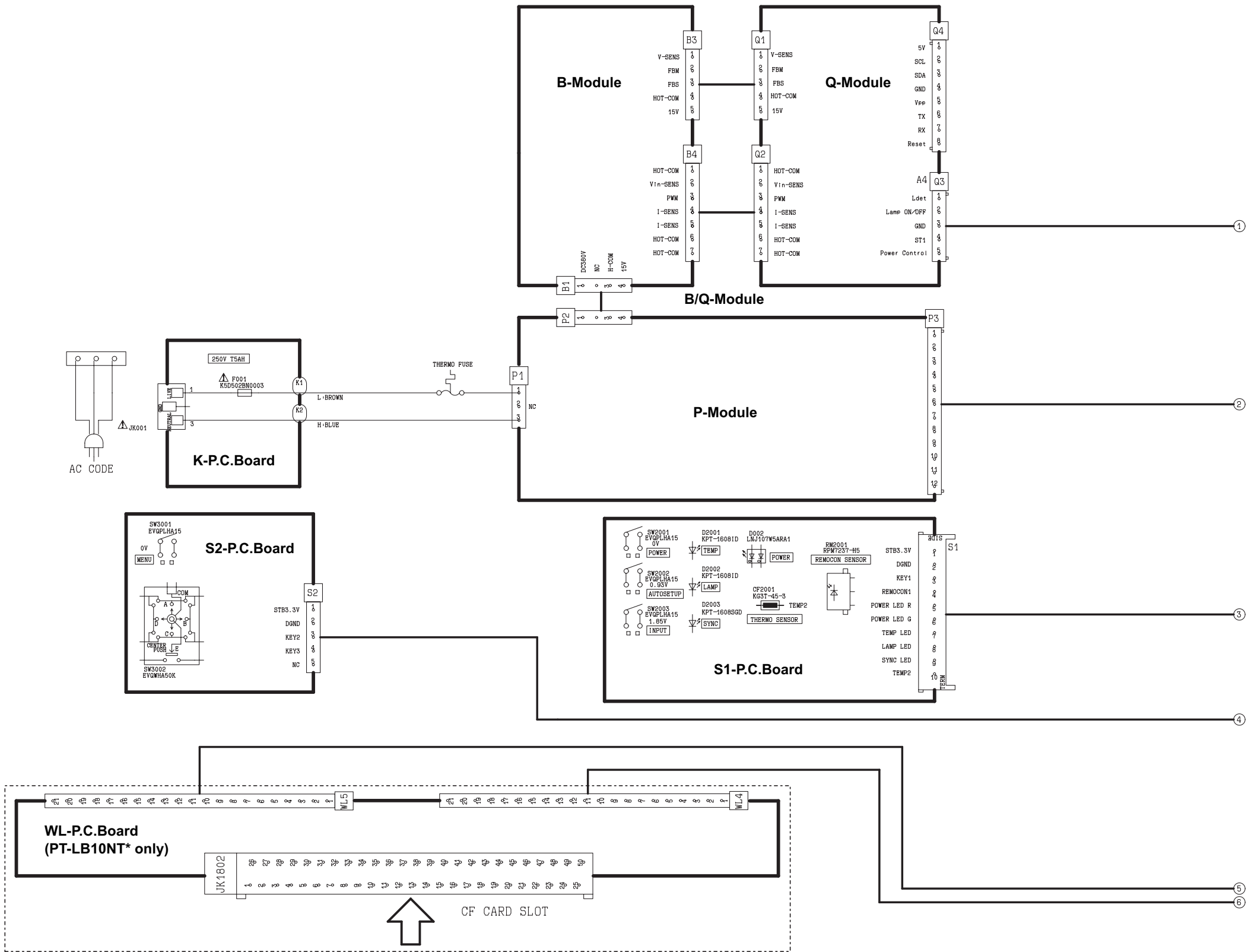
PT-LB10NTU/E only



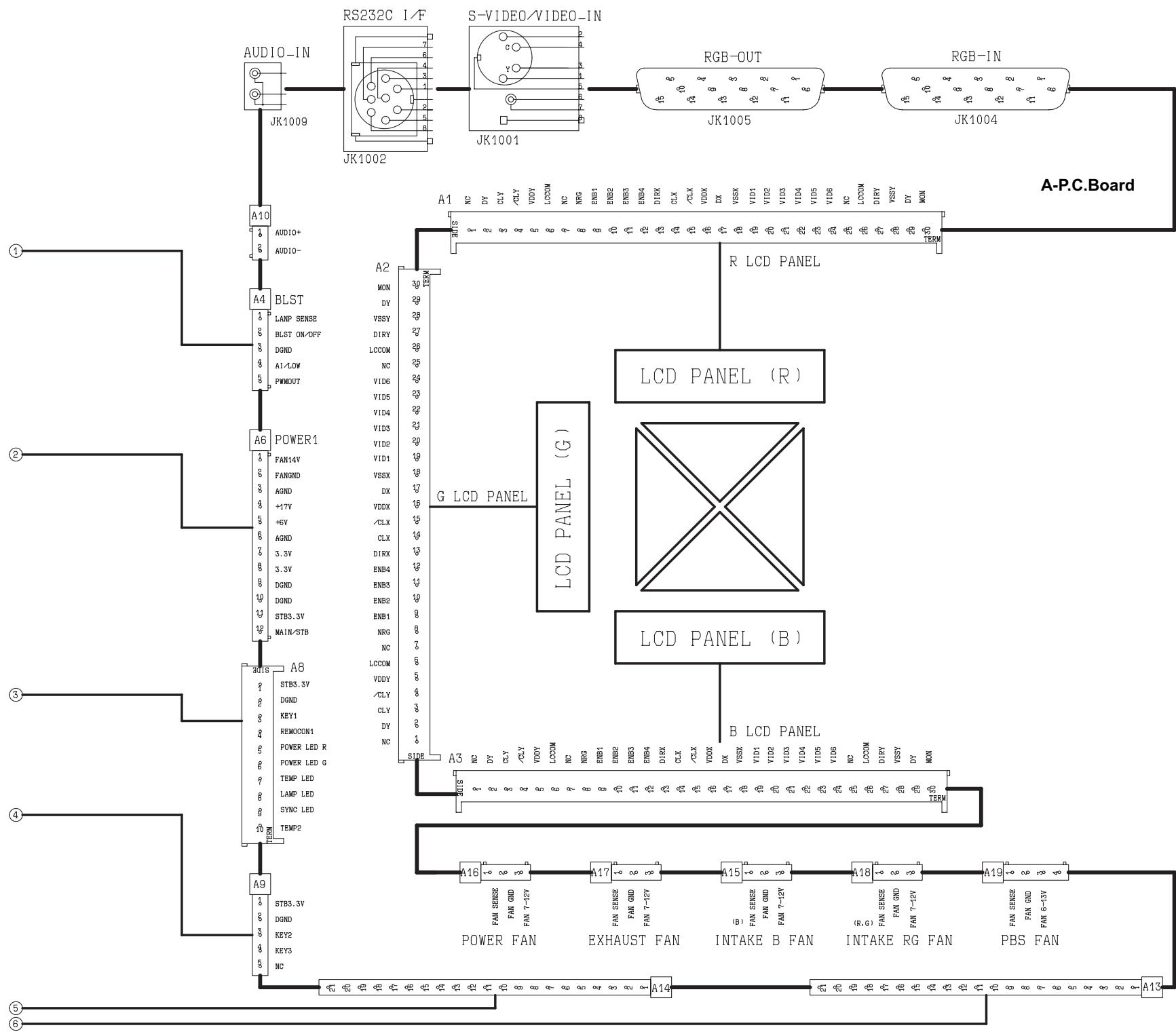
1 2 3 4 5 6 7 8 9

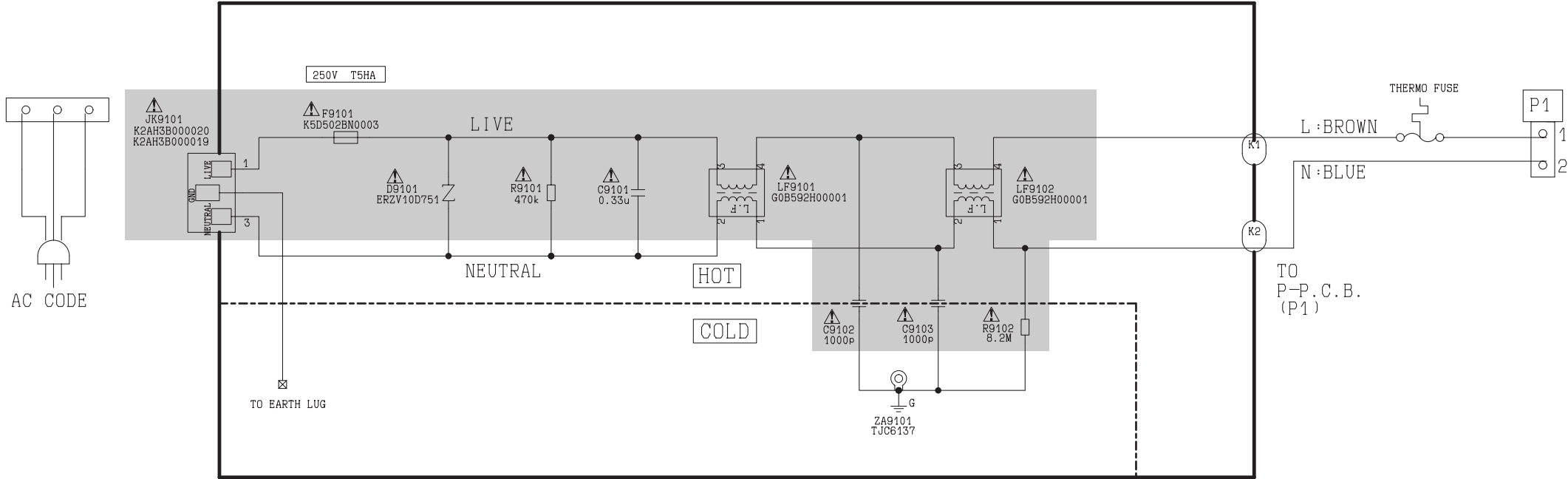


Interconnection Block Diagram (1/2)



Interconnection Block Diagram (2/2)








## Schematic Diagram for Model PT-LB10NTU/LB10U/LB10V

### IMPORTANT SAFETY NOTICE

THE SHADED AREA ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTING YOURSELF FROM ELECTRICAL HAZARDS. WHEN SERVICING, IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL PARTS OF THE SCHEMATIC.

## Schematic Diagram for Model PT-LB10NTE/LB10E/LB10V

### Important Safety Notice

Components identified by the international symbol  have special characteristics important for safety. When replacing any of these components, use only the specified ones.






#### Notes:

##### 1. Resistor

All the resistors are carbon 1/4W resistors, unless marked as follows: The unit of resistance is an OHM [ $\Omega$ ] (K=1 000 M=1 000 000).

- |  |   |
|--|---|
|  : Nonflammable |  : Metal Oxide |
|  : Solid        |  : Metal Film  |
|  : Wire Wound   |  : Fuse        |


##### 2. Capacitor

- |  |  |
|--|--|
|  : Temperature Compensation |  : Electrolytic     |
|  : Polyester                |  : Bipolar          |
|  : Metalized Polyester     |  : Dipped Tantalum |
|  : Polypropylene          |  : Z-Type         |

##### 3. Coil

The unit of inductance is a H, unless otherwise noted.





##### 4. Test Point

-  : Test Point

##### 5. Voltage Measurement

The voltage is measured by an electronic voltmeter receiving the colorbar signal when all the customer's controls are set to the factory default.

##### 6. Color code for the links between diagrams and circuit boards

From/To		To/From	Color code
Block diagram		Schematic diagram	Magenta
Schematic diagram		Schematic diagram	Green
Schematic diagram		Circuit boards	Yellow
Schematic diagram		Waveforms	Cyan (Light blue)

##### 7. HOT and COLD indications

The power circuit board contains a circuit area using a separate power supply to isolate the ground connection. The circuit is a HOT and COLD circuit. Take the precautions below:

##### 8. This schematic diagram is the latest at the time of printing and the subject to change without notice.

#### Precautions:

1. NEVER touch the HOT part or the HOT and COLD parts at the same time, or you may get an electric shock.
2. NEVER short-circuit the HOT and COLD circuits, or the fuse may blow and the parts may break.
3. NEVER connect an instrument such oscilloscope to the HOT and COLD circuit simultaneously, or the fuse may blow. Connect the ground of the instrument to the ground of the circuit.
4. MAKE SURE to unplug the power cord from the power outlet before removing the chassis.



## LB10U/LB10VU/LB10SU

Notice

IMPORTANT FOR PROTECTION FROM FIRE AND ELECTRICAL SHOCK

USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS OF

## LB10E/LB10VE/LB10SE

Notice

When replacing any of these components, use only the manufacturer's

IM [ $\Omega$ ] (K=1 000 M=1 000 000).

Manufacturer's controls are set to the standard condition.

Connection. The circuit is defined by HOT and COLD indications in the schematic

notice.

Electric shock.

may blow. Connect the ground of instruments to the ground of the circuit being measured.

**F**

# E

## D

## C

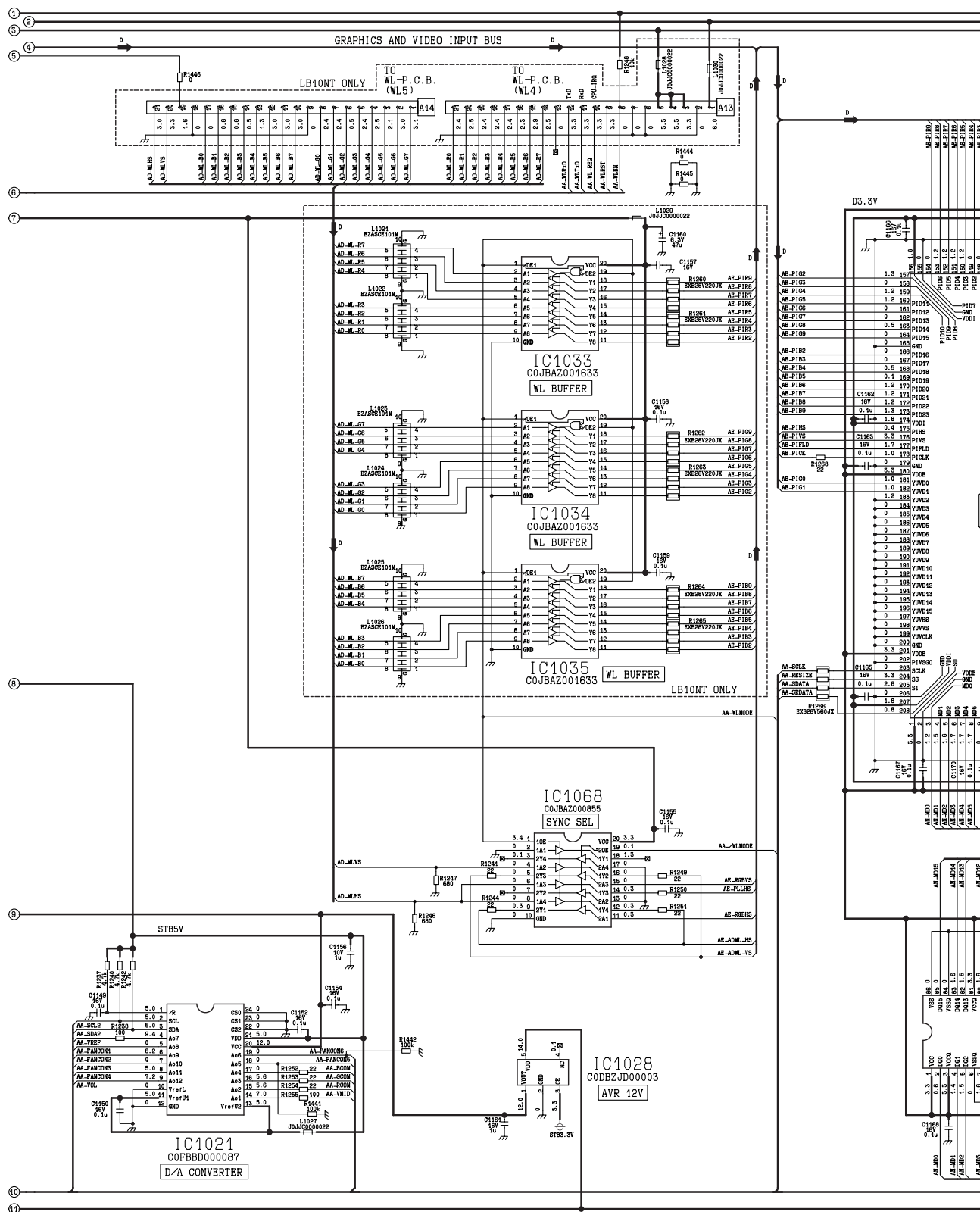
**B**

**A**

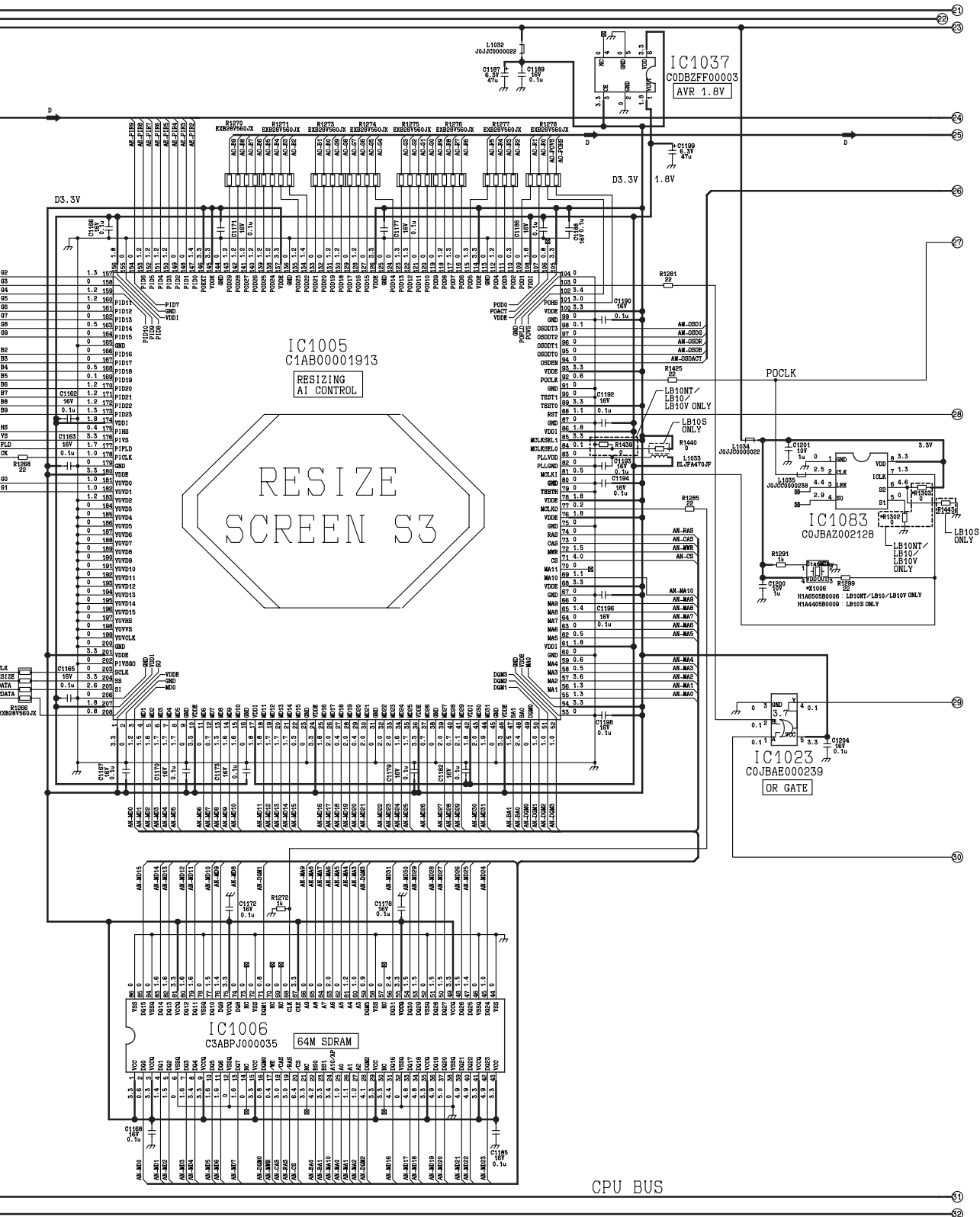




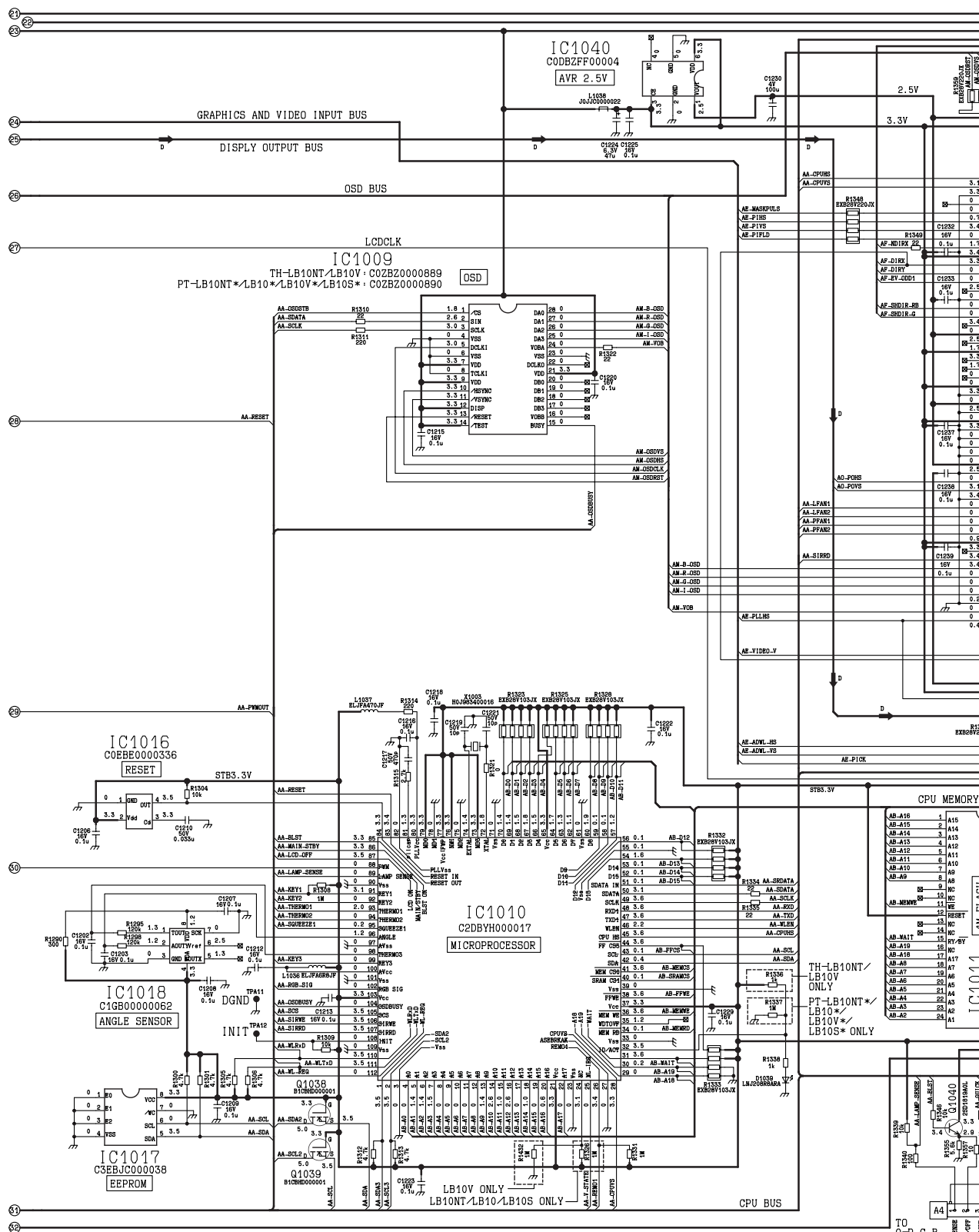
**TXANP01PVNZ (LB10\*)**  
**TXANP01PXAZ (LB10S\*)**







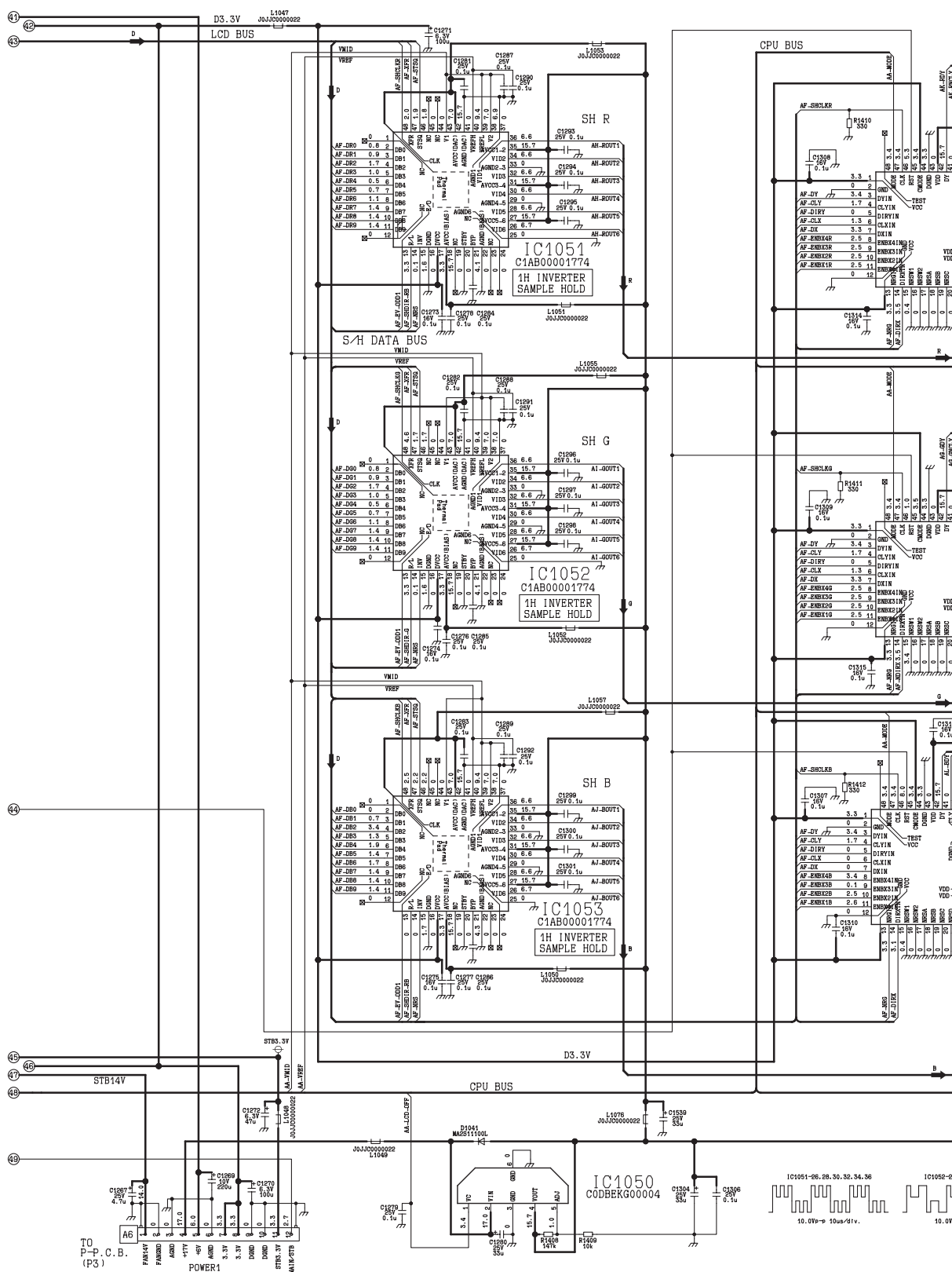
**TXANP01PVNZ (LB10\*)**  
**TXANP01PXAZ (LB10S\*)**







**TXANP01PVNZ (LB10\*)**  
**TXANP01PXAZ (LB10S\*)**





## F

**TNPA3143 (1/2) (PT-LB10NT\*)**

## E

D

**C**

**B**

**A**







## 12.6. WL-P.C.Board (2/2)

WL-P.C.Board

TNPA3143 (2/2) (PT-LB10NT\*)

F

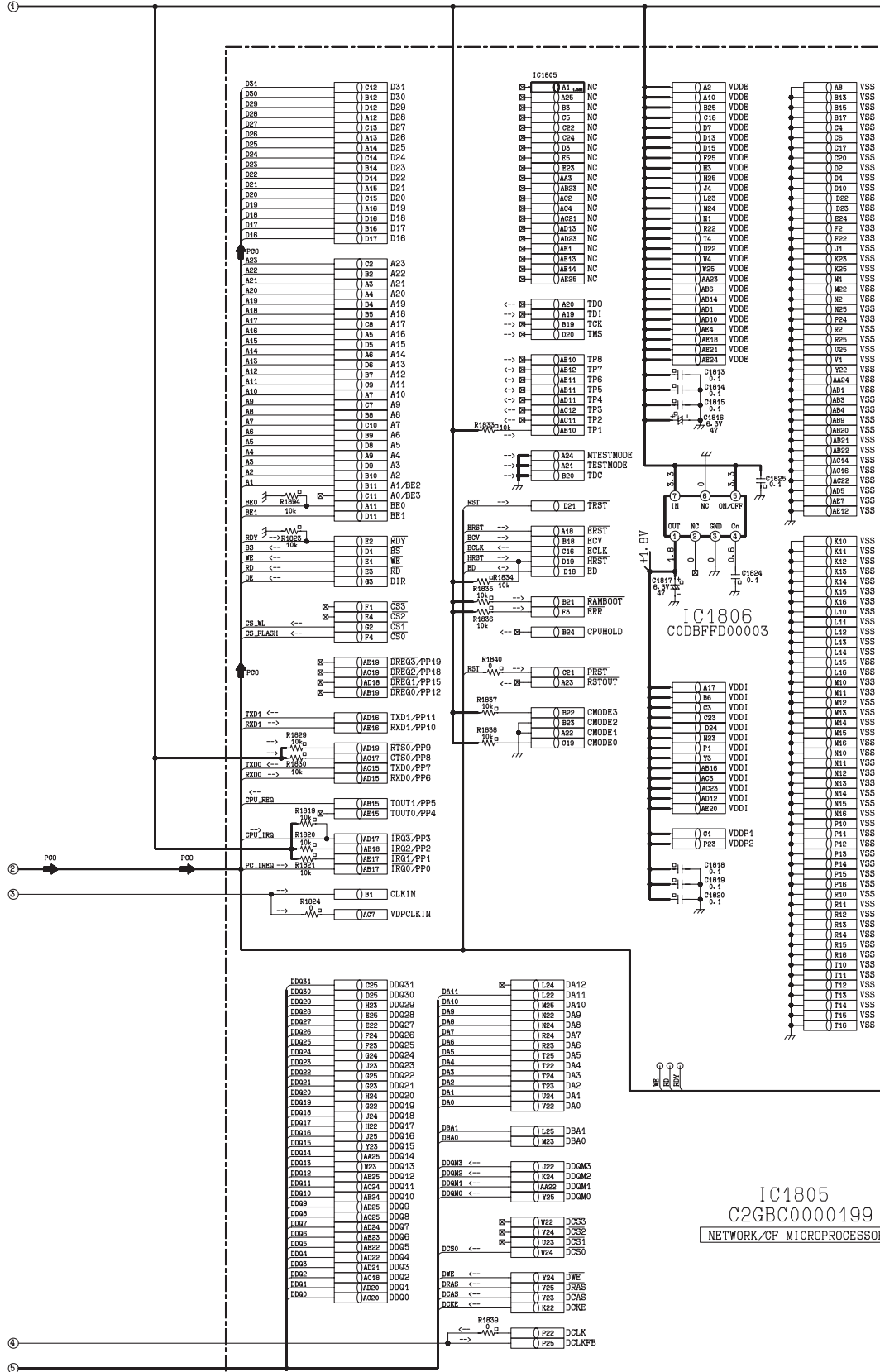
E

D

C

B

A





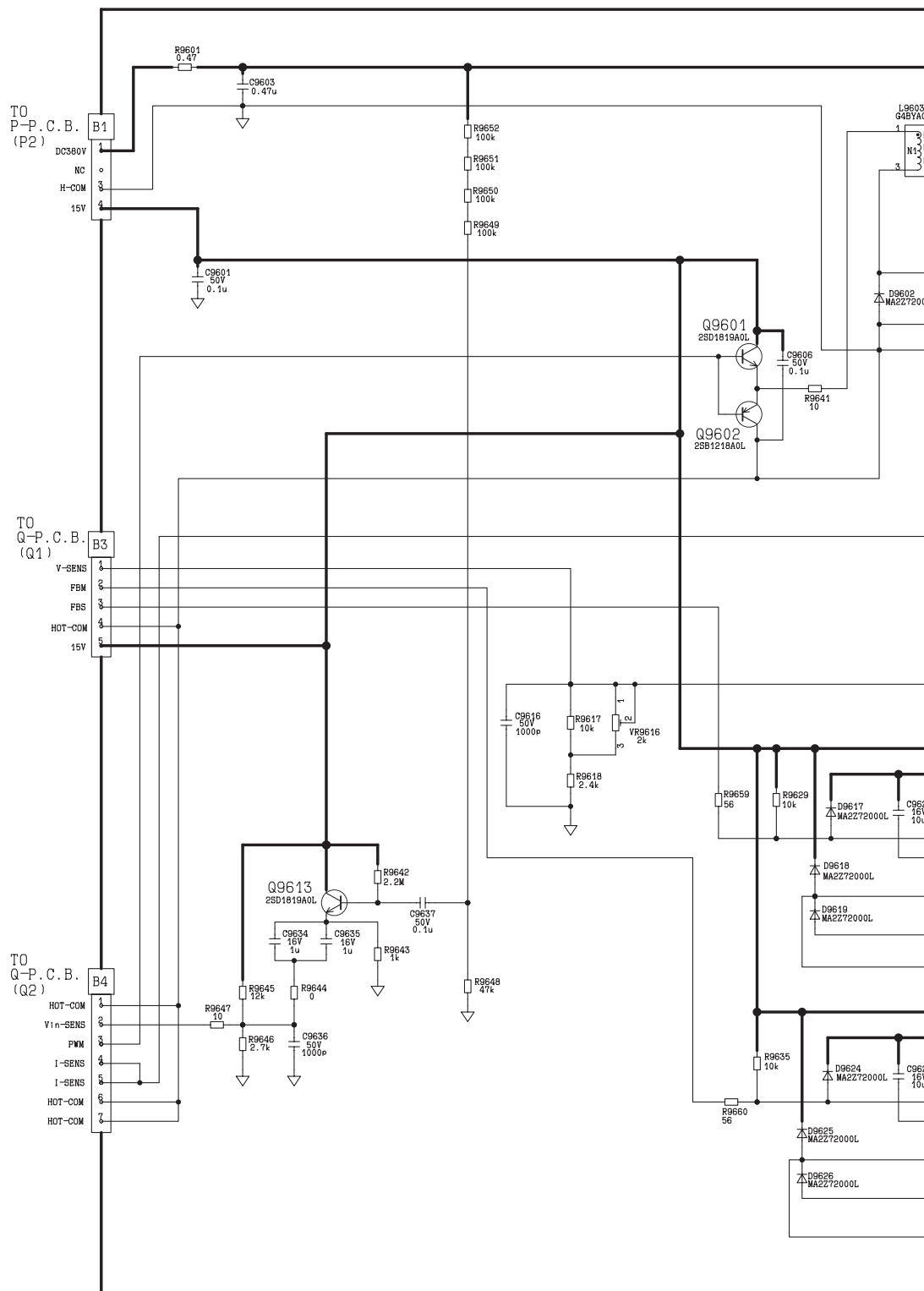


## 12.7. B-Module (1/2)

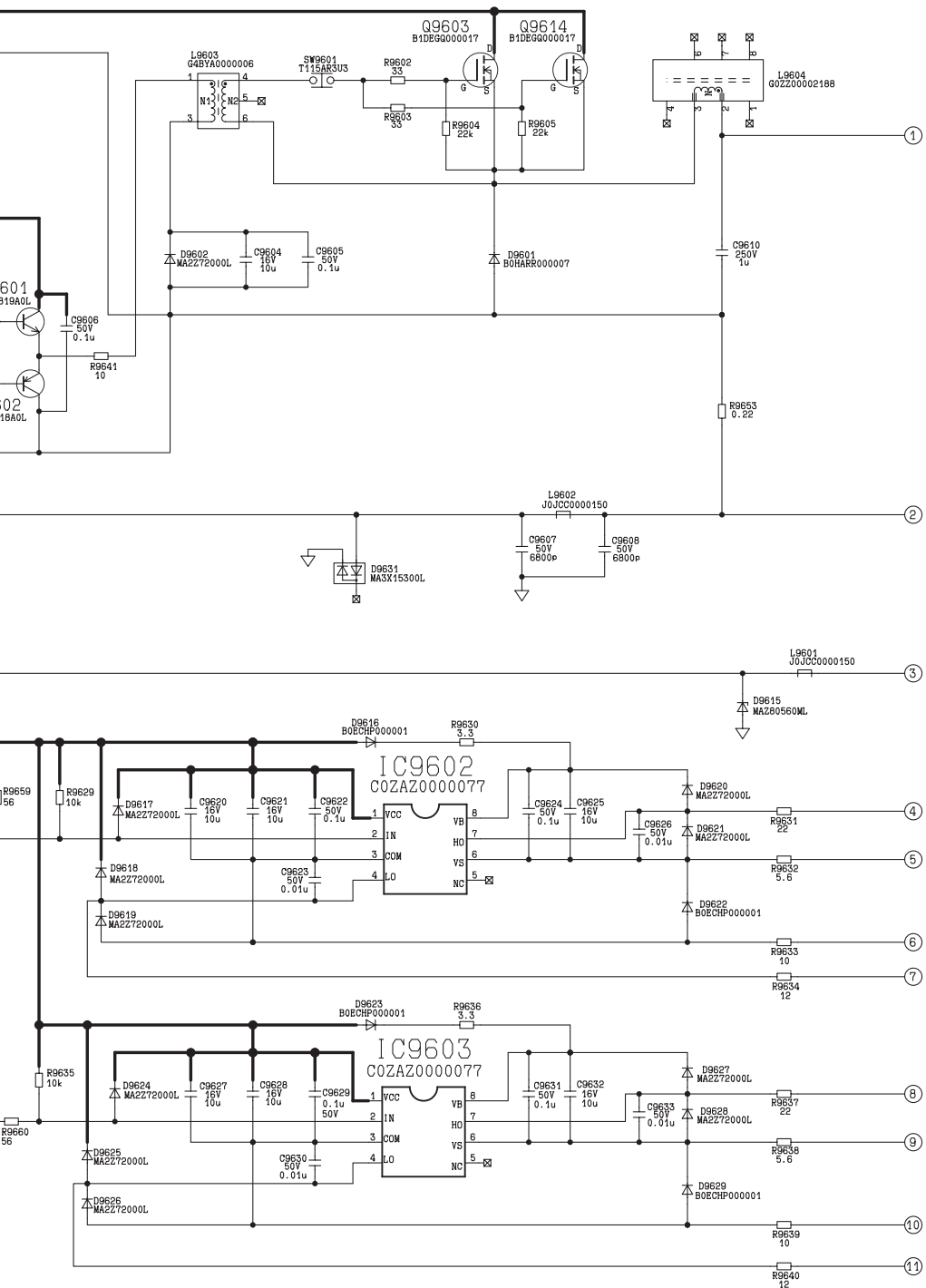


## B-Module TXANP05VJW5 (1/2) Module Replacement

Only supplied components IC9602-03, Q9603-11, Q9614, D9601, D9604-05, R9601, R9630-34, R9636-40, R9653, C9603, C9604



14, D9601, D9604-09, D9611-12, D9616-29,  
0, R9653, C9603, C9610, C9617-19, T9604, SW9601, S9602, TXJ/L2VJW5



## 12.8. B-Module (2/2)



### B-Module TXANP05VJW5 (2/2) Module Replacement

Only supplied components IC9602-03, Q9603-11, Q9614, D9601, D9604-05, R9601, R9630-34, R9636-40, R9653, C9603, C9604

F

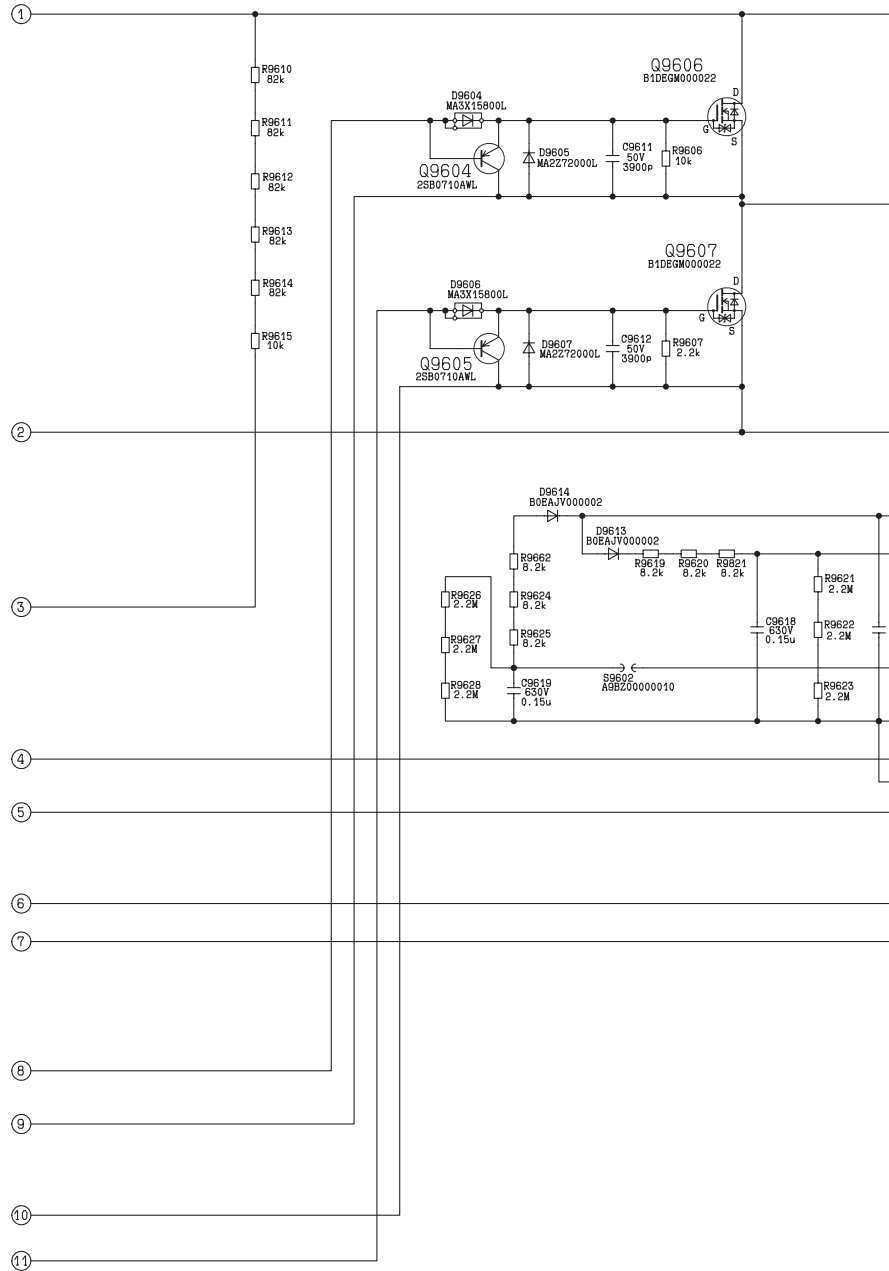
E

D

C

B

A



1

2

3

4

5



## 12.9. K-P.C.Board



K-P.C.Board

TXANP03VJW5

F

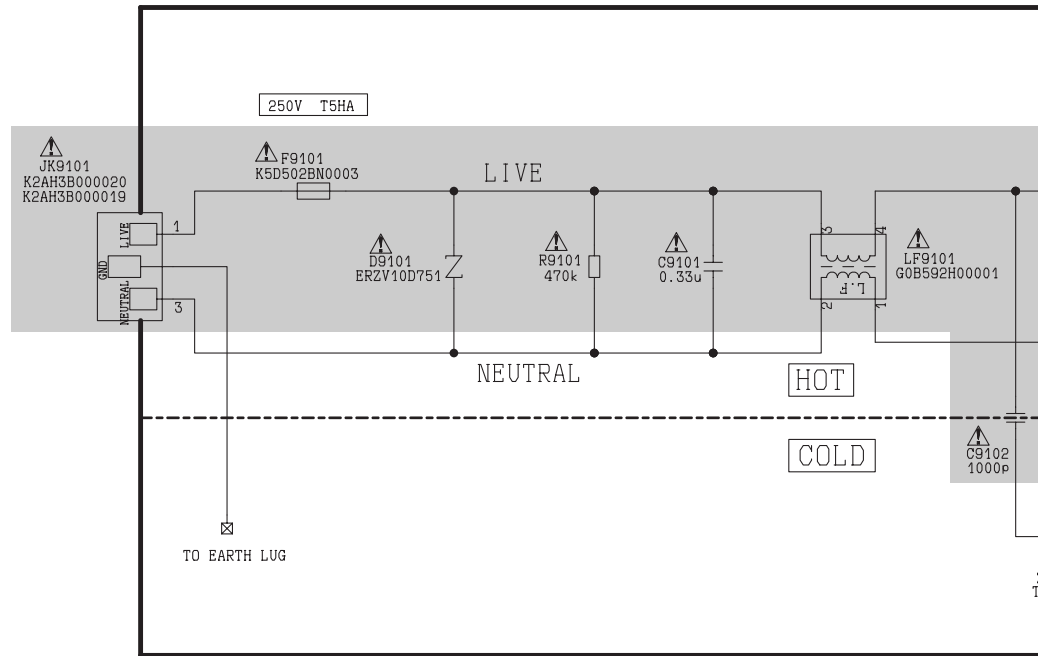
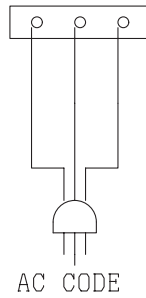
E

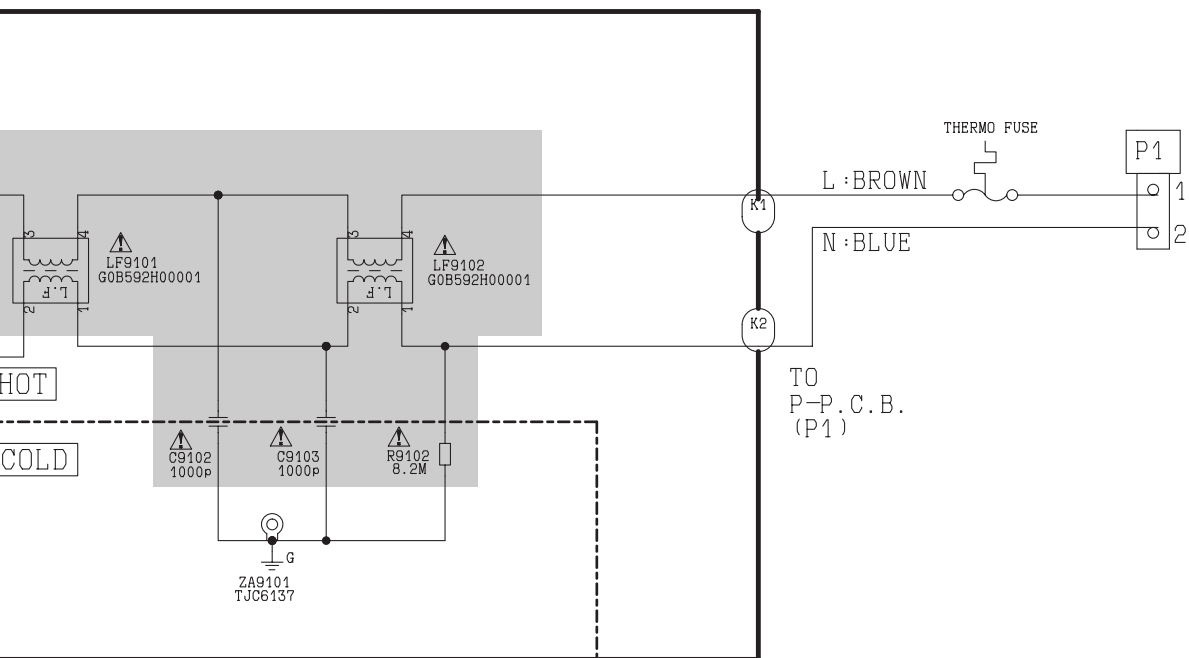
D

C

B

A





12.10. S1-P.C.Board, S2-P.C.Board



S1-P.C.Board      TNPA3144

F

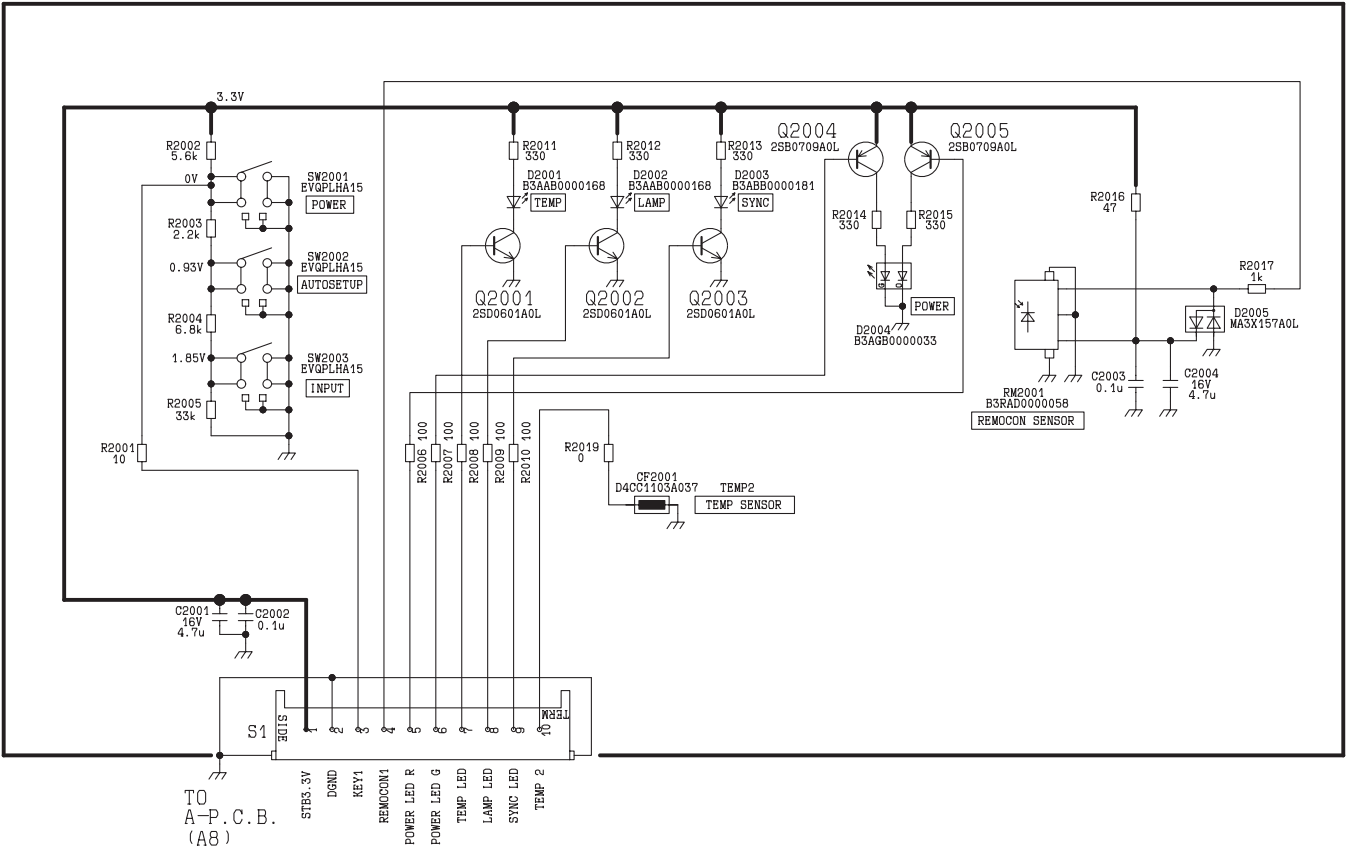
E

D

C

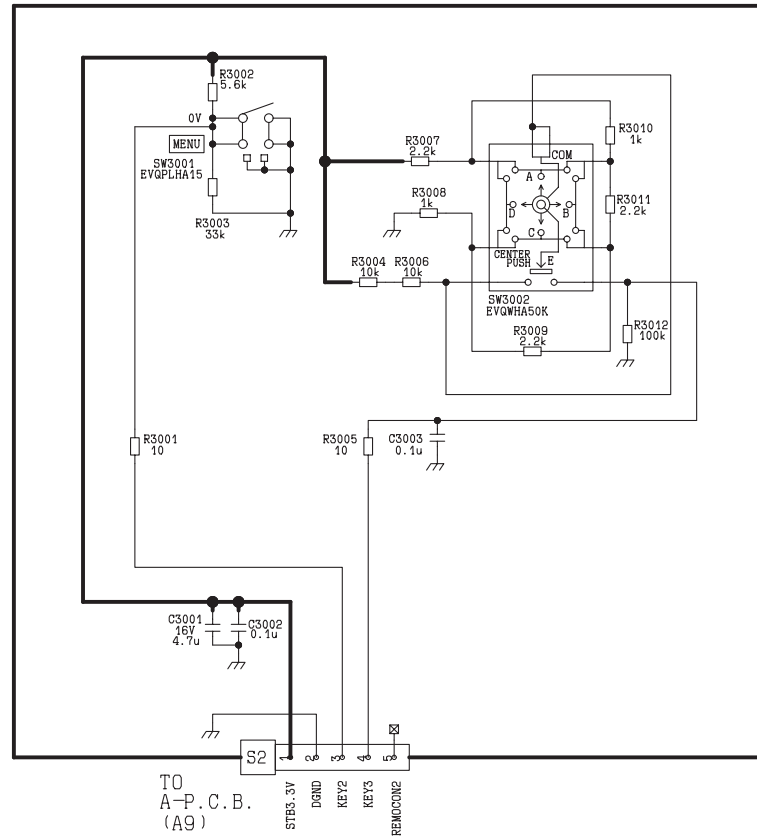
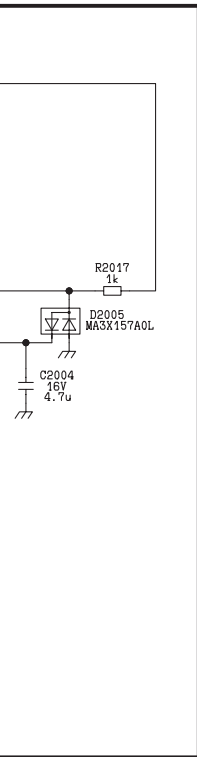
B

A



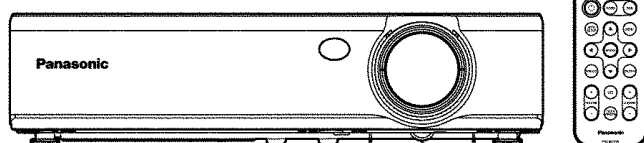


## S2-P.C.Board TNPA3145



# Service Manual

## LCD Projector



**PT-LB10NTU**  
**PT-LB10NTE**  
**PT-LB10U**  
**PT-LB10E**  
**PT-LB10VU**  
**PT-LB10VE**  
**PT-LB10SU**  
**PT-LB10SE**

The service technician is required to read and follow the "Safety Precautions" and "Important Safety Notice" in this service manual.

## Specifications

**Power supply:** 100 V - 240 V AC, 50 Hz / 60 Hz

### Power consumption:

220 W [During standby (when fan is stopped):  
Approx. 6 W]

**Amps:** 2.5 A - 1.0 A

### LCD panel:

Panel size (diagonal): 0.7 type (17.78 mm)  
Aspect ratio: 4:3  
Micro lens array: Available  
Display method: 3 transparent LCD panels (RGB)  
Drive method: Active matrix method  
Pixels:  
PT-LB10NTU/E, LB10U/E, LB10VU/E:  
786 432 (1 024 × 768) × 3 panels  
PT-LB10SU/E: 480 000 (800 × 600) × 3 panels

### Lens:

Manual zoom (1 - 1.2) / Manual focus  
PT-LB10NTU/E, LB10U/E, LB10SU/E:  
F 1.7 - 1.9, f 21.5 mm - 25.8 mm  
PT-LB10VU/E:  
F 2.0 - 2.3, f 22.0 mm - 26.2 mm

**Lamp:** UHM lamp (155 W)

### Luminosity:

PT-LB10NTU/E, LB10U/E, LB10SU/E: 2 000 lm  
PT-LB10VU/E: 1 600 lm

### Scanning frequency (for RGB signals):

Horizontal scanning frequency: 15 kHz - 91 kHz  
Vertical scanning frequency: 50 Hz - 85 Hz  
Dot clock frequency: 100 MHz or less

### YPbPr signals:

480i, 480p, 576i, 576p, 1 080/60i, 1 080/50i, 720/60p

### Color system:

7 (NTSC / NTSC 4.43 / PAL / PAL-M / PAL-N / PAL60 / SECAM)

**Projection size:** 838.2 mm - 7 620 mm

### Throw distance:

PT-LB10NTU/E, LB10U/E, LB10SU/E: 1.1 m - 10.7 m  
PT-LB10VU/E: 1.1 m - 11.0 m

**Optical axis shift:** 6:1 (fixed)

**Screen aspect ratio:** 4:3

### Installation:

Front / Rear / Ceiling / Desk (Menu selection method)

**Speakers:** 4.0 cm × 3.0 cm oval × 1

### Max. useable volume output:

1 W (monaural)

### Connectors:

**RGB IN / OUT:** Dual-line, one for input and one for output  
D-SUB HD 15-pin (female)

During YPbPr input/output:

Y: 1.0 V [p-p], 75 Ω  
PbPr: 0.7 V [p-p], 75 Ω

During RGB input/output:

RGB: 0.7 V [p-p], 75 Ω  
G.SYNC: 1.0 V [p-p], 75 Ω

HD / SYNC: TTL, automatic positive/negative polarity compatible

VD: TTL, automatic positive/negative polarity compatible

**VIDEO IN:** Single-line, RCA pin jack

1.0 V [p-p], 75 Ω

**S-VIDEO IN:** Single-line, Mini DIN 4-pin

Y 1.0 V [p-p], C 0.286 V [p-p], 75 Ω,

**AUDIO IN:** Single Line, RCA pin jack × 2 (L-R)  
0.5 V [rms]

**SERIAL:** DIN 8-pin RS-232C compatible

### Cabinet:

Molded plastic (PC/ABS)

### Dimensions:

Width: 297 mm  
Height: 73 mm  
Length: 210 mm (without lens cover)

### Weight:

PT-LB10NTU/E: 2.2 kg  
PT-LB10U/E, LB10VU/E, LB10SU/E: 2.1 kg

### Operating environment:

Temperature: 0° C - 40° C  
(when FAN CONTROL is set to "HIGH" 0° C - 35° C)  
Humidity: 20 % - 80 % (no condensation)

### Certifications:

PT-LB10NTU/LB10U/LB10VU/LB10SU:  
UL60950, C-UL, FCC Class B  
PT-LB10NTE/LB10E/LB10VE/LB10SE:  
EN60950, EN55022, EN61000-3-2,  
EN61000-3-3, EN55024

### <Remote control unit>

### Power supply:

3 V DC (Lithium CR2025 battery × 1)

### Operating range:

Approx. 7 m  
(when operated directly in front of signal receptor)

**Dimensions:** Width: 40 mm

Height: 86 mm

Length: 6.5 mm

**Weight:** 18 g (including battery)

### Accessories:

**Card Remote control unit (TNQE239):** 1

**Lithium battery for remote control unit (CR2025) :** 1

### Power cord:

PT-LB10NTU/LB10U/LB10VU/LB10SU:  
K2CG3DR00005 1

PT-LB10NTE/LB10E/LB10VE/LB10SE:  
K2CT3DR00005 (U.K.) 1  
K2CM3DR00002 (continental) 1

**RGB signal cable [K1HA15DA0002 (1.8 m)]:** 1

**CD-ROM (TQBH9005) (LB10NTU/E only)** 1

**Wireless Card (N5HBD0000028) (LB10NTU only)** 1

(N5HBD0000029) (LB10NTE only) 1

(N5HBD0000031) (for Spain) 1

(N5HBD0000030) (for Singapore) 1

(N5HBD0000028) (for Malaysia) 1

**Hexagon wrench (TKLA0701) (LB10NTU/E only)** 1

**Carrying bag (TPEP013):** 1

### Options:

**Ceiling bracket:** ET-PKC80

**Wireless remote control unit:** ET-RM300

**Serial adapter (DIN 8-pin/D-sub 9-pin):** ET-ADSER

**Wireless card (for PT-LB10NTU/E):**

ET-CDWL3U/ET-CDWL2U (for North America)

ET-CDWL3E/ET-CDWL2E

(for U.K., Continental Europe except Spain)

ET-CDWL3ES/ET-CDWL2ES (for Spain)

ET-CDWL3SG/ET-CDWL2SG (for Singapore)

ET-CDWL3U/ET-CDWL2U (for Malaysia)

• Specifications are subject to change without notice.

• Weight and dimensions shown are approximate.

**⚠ WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

**Trademark Acknowledgements**

- VGA and XGA are trademarks of International Business Machines Corporation.
  - Macintosh is a registered trademark of Apple Computer, Inc.
  - S-VGA is a registered trademark of the Video Electronics Standards Association.
- All other trademarks are the property of the various trademark owners.

**CAUTION****Lithium Battery**

**Risk of explosion if battery is replaced by an incorrect type. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.**

(See also Operating Instructions.)

**Precaution**

If using of this projector at high elevations (above 1 400 m), set FAN CONTROL to HIGH. (Refer to "Option settings" in Operating Instructions.)

Failure to observe this may cause malfunctions.

Never use this projector at an elevation of 2 700 m or higher.

Using this projector at high elevations, consult your dealer or Authorized Service Center about preparations.

**About lead free solder (PbF)**

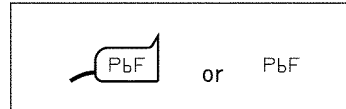
This projector is using the P.C.Board which applies lead free solder. The use of lead free solder is recommended from the standpoint of antipollution for the global environment in service.

Notes:

- Lead free solder: Sn-Ag-Cu (tin, silver and copper) has a higher melting point (approx. 217°C) than standard solder. Typically, the melting point is 30°C to 40°C higher. When servicing, use a high temperature soldering iron with temperature limitation function and set it to 370±10°C.
- Be precautionous about lead free solder: Sn-Ag-Cu (tin, silver and copper) will tend to splash when heated too high (approx. 600°C or higher).
- Use lead free solder for the P.C.Board (specified on it as "PbF") which uses lead free solder. (When you unavoidably use lead solder, use lead solder after removing lead free solder. Or be sure to heat the lead free solder until it melts completely, before applying lead solder.)
- After soldering to double layered P.C.Boards, check the component side for excess solder which may flow onto the opposite side.

About the identification of the lead free solder P.C.Board

For the P.C.Board which applies lead free solder, the symbol as shown in the figure below is printed or stamped on the surface or the back of P.C.Board.



For US

**IMPORTANT SAFETY NOTICE**

There are special parts used in Panasonic LCD Projectors which are important for safety. These parts are shaded on the schematic diagram. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of PANASONIC BROADCAST & TELEVISION SYSTEMS COMPANY.

**WARNING:**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**CAUTION:** Any unauthorized changes or modifications to this equipment will void the users authority to operate.

**CONTENTS**

	Page		Page
<b>1 Safety Precautions</b>	<b>5</b>	<b>1.2. Leakage Current Check</b>	<b>5</b>
1.1. General Guidelines	5	<b>1.3. UV Precaution and UHM Lamp Precautions</b>	<b>5</b>

<b>2 Ext Option</b>	<b>6</b>	7.17. Replacement of Projection Polarizer	20
2.1. Procedure to enter EXT OPTION	6	7.18. Replacement of PBS Array (Analysis Block)	21
2.2. EXT OPTION Menu and Functions	6	<b>8 Measurement and Adjustments</b>	<b>22</b>
2.3. Canceling EXT OPTION	6	8.1. Adjustment Procedure Flowchart	22
<b>3 Self-Check Mode</b>	<b>6</b>	8.2. Cautions for Adjustment	22
3.1. Procedure to enter the self-check mode	7	8.3. Setting Before Adjustment	22
3.2. Self Check Display and Contents	7	8.4. Convergence Adjustment	22
3.3. Canceling the self-check mode	8	8.5. Lighting Area Adjustment	24
<b>4 Service Mode</b>	<b>8</b>	8.6. Software for Adjustment	25
4.1. Procedure to enter the service mode	8	8.7. Flicker Adjustment	26
4.2. Canceling the service mode	8	8.8. Input Level Adjustment	26
<b>5 Flicker Adjustment Mode</b>	<b>8</b>	<b>9 Troubleshooting</b>	<b>28</b>
5.1. Procedure to enter the adjustment mode	8	<b>10 Interconnection Block Diagram</b>	<b>39</b>
5.2. Adjustment Display and Contents	8	10.1. Interconnection Block Diagram (1 / 2)	39
5.3. Canceling the flicker adjustment mode	8	10.2. Interconnection Block Diagram (2 / 2)	40
<b>6 Using the SERIAL Connector</b>	<b>9</b>	<b>11 Block Diagram</b>	<b>41</b>
6.1. Connection	9	11.1. Power Supply	41
6.2. Pin Layout and Signal Names for SERIAL Connector	9	11.2. Signal Processing (1 / 3)	42
6.3. Communication Settings	9	11.3. Signal Processing (2 / 3)	43
6.4. Basic Format	10	11.4. Signal Processing (3 / 3)	44
6.5. Control / Query Commands	10	<b>12 Schematic Diagram</b>	<b>45</b>
6.6. Communication Cable Specifications	12	12.1. A-P.C.Board (1 / 4)	46
6.7. Signal Selector Connecting Cable Specifications	13	12.2. A-P.C.Board (2 / 4)	47
<b>7 Disassembly Instructions</b>	<b>14</b>	12.3. A-P.C.Board (3 / 4)	48
7.1. Printed Circuit Board and Main Parts Location	14	12.4. A-P.C.Board (4 / 4)	49
7.2. Removal of Upper Case	15	12.5. WL-P.C.Board (1 / 2)	50
7.3. Removal of A-P.C.Board	15	12.6. WL-P.C.Board (2 / 2)	51
7.4. Removal of WL-P.C.Board (PT-LB10NTU / E only)	16	12.7. B-Module (1 / 2)	52
7.5. Removal of S1-P.C.Board	16	12.8. B-Module (2 / 2)	53
7.6. Removal of S2-P.C.Board	16	12.9. K-P.C.Board	54
7.7. Removal of K-P.C.Board	16	12.10. S1-P.C.Board, S2-P.C.Board	55
7.8. Removal of B / Q-Module	16	<b>13 Circuit Boards</b>	<b>57</b>
7.9. Removal of P-Module	17	13.1. A-P.C.Board (Foil Side) / WL-P.C.Board (Foil Side /	
7.10. Removal of Lamp Unit	17	Component Side)	57
7.11. Removal of Analysis Block and Lens	18	13.2. A-P.C.Board (Component) / S1-P.C.Board (Foil Side /	
7.12. Removal of LCD Block	18	Component Side)	58
7.13. Replacement of LCD Panel	18	<b>14 Terminal guide of ICs and transistors</b>	<b>59</b>
7.14. LCD Panel Discrimination	20	<b>15 Exploded Views</b>	<b>60</b>
7.15. LCD Panel Combination	20	<b>16 Replacement Parts List</b>	<b>63</b>
7.16. Replacement of Incidence Polarizer	20		

# 1 Safety Precautions

## 1.1. General Guidelines

- For continued safety, no modification of any circuit must be attempted.
- Unplug the power cord from the power outlet before disassembling this projector.
- It is advisable to use an isolation transformer in the AC power line before the service.
- Observe the original lead dress during the service. If a short circuit is found, replace all the parts overheated or damaged by the short circuit.
- After the service, all the protective devices such as insulation barriers, insulation papers, shields, and isolation R-C combinations must be properly installed.
- After the service, check the leakage current to prevent the customer from getting an electric shock.

## 1.2. Leakage Current Check

1. Prepare the measuring circuit as shown in Fig.1.

Be sure to use a voltmeter having the performance described in Table 1.

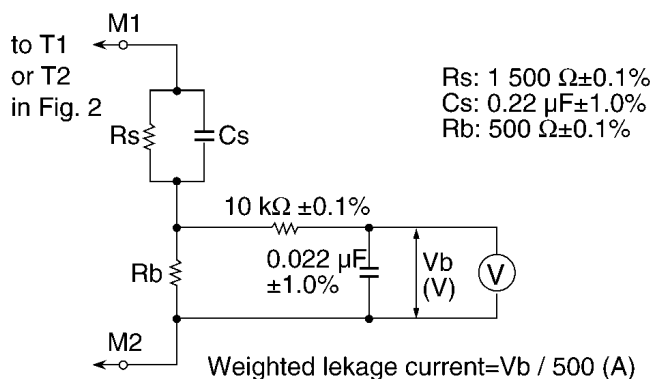


Fig. 1

	Performance
Voltmeter (rms reading)	Accuracy: $\leq 2\%$ Input resistance: $\geq 1 \text{ M}\Omega$ Input capacitance: $\leq 200 \text{ pF}$ Frequency range: 15 Hz to 1 MHz

Table 1

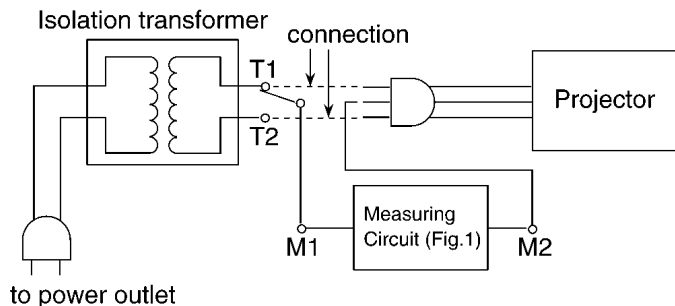


Fig. 2

2. Assemble the circuit as shown in Fig. 2. Plug the power cord in a power outlet.

3. Connect M1 to T1 according to Fig. 2 and measure the voltage.
4. Change the connection of M1 from T1 to T2 and measure the voltage again.
5. The voltmeter must read 0.375 V or lower in both of steps 3 and 4. This means that the current must be 0.75 mA or less.
6. If the reading is out of the above standard, the projector must be repaired and rechecked before returning to the customer because of a possibility of an electric shock.

## 1.3. UV Precaution and UHM Lamp Precautions

- Be sure to unplug the power cord from the power outlet when replacing the lamp.
- Because the lamp reaches a very high temperature during its operation, wait until it cools completely when replacing the Lamp Unit.
- The lamp emits small amounts of UV-radiation, avoid direct-eye contact with the light.
- Because the high pressure lamp involves a risk of explosion, never touch the lamp wire lead during the service. (See Fig. 3)

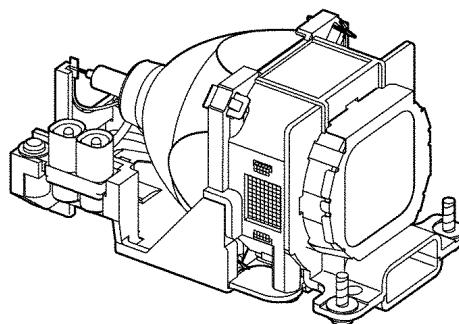


Fig.3

## 2 Ext Option

This projector has EXT OPTION in addition to standard on-screen menus.

- There are SELF CHECK and SERVICE MODE for service, etc.

### 2.1. Procedure to enter EXT OPTION

1. Press "MENU" button on the main unit or remote control unit to display "MENU" screen, then select "OPTION1" and press "ENTER" button.
2. Select "OSD" on "OPTION1" menu and press "ENTER" button 3 seconds or longer.  
MENU → OPTION1 → OSD

### 2.2. EXT OPTION Menu and Functions

#### EXT OPTION

FREEZE MSG	OFF / ON
ANGLE RESET	OFF / ON
FAN FULLMODE	OFF / ON
AUTO SETUP	STANDARD / SPECIAL
SELF CHECK	
SERVICE MODE	
FLICKER ADJ	

- FREEZE MSG

Switching ON/OFF "FREEZE" on-screen display

- ANGLE RESET

Switching ON/OFF "AUTO KEYSTN (Automatic Keystone)" reference level setting

**Note:**

- Normally, do not select. (Angle reset data will be rewritten.)

- FAN FULLMODE

Setting the cooling fan motor rotation speed

- Switching ON "FAN FULLMODE", the rotation level of the fan becomes high-speed rotation (fixed). Moreover, when "FAN FULLMODE" is ON, changing "FAN CONTROL" in OPTION2 becomes impossible (setting FAN FULLMODE is given priority more than FAN CONTROL).

- AUTOSETUP

Setting AUTO SETUP mode

- STANDARD: To set the normal mode (the dot clock is adjusted strictly))
- SPECIAL: To set the special mode (the dot clock is adjusted roughly)

**Note:**

- Do not change the initial setting (STANDARD).

- SELF CHECK

To enter the self-check mode

- SERVICE MODE

To enter the service mode

- FLICKER ADJ

To enter the flicker adjustment mode

### 2.3. Canceling EXT OPTION

Press "MENU" button on the main unit or remote control unit.

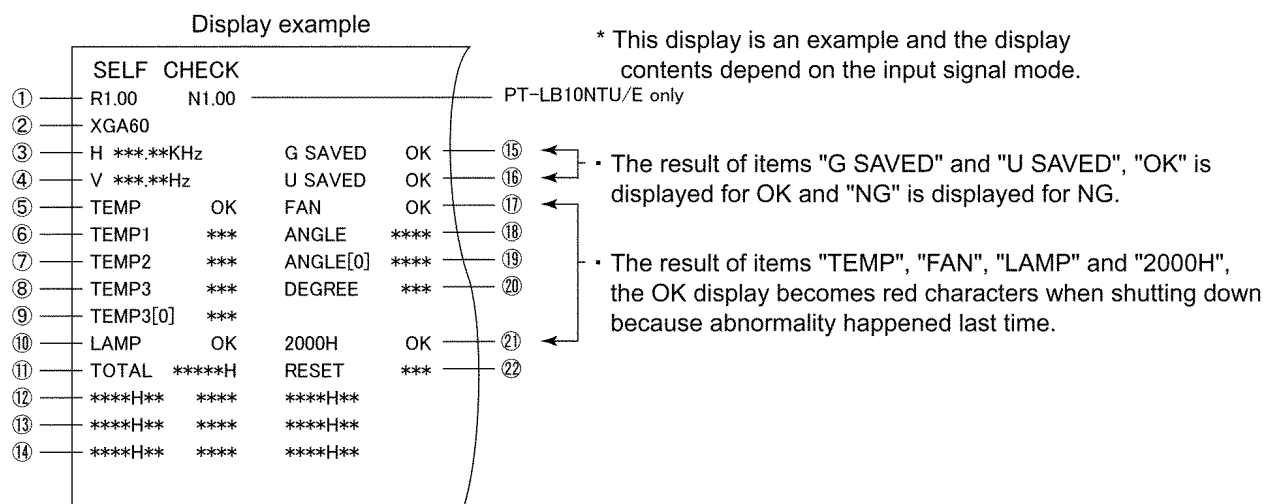
## 3 Self-Check Mode

This mode is used to narrow down the location of the failure.

### 3.1. Procedure to enter the self-check mode

Select "SELF CHECK" on "EXT OPTION" menu and press "ENTER" button on the main unit or remote control unit.

### 3.2. Self Check Display and Contents



	Display Contents	Remarks	
①	Microcomputer Version Display	Software Version	
②	Resolution Name	Different display according to the input signal	
③	Horizontal Signal Frequency	RGB or YPbPr signal reception only	
④	Vertical Signal Frequency		
⑤	Temperature Abnormality Check	Cause of Lamp Malfanction	
⑥	Thermosensor 1 Measurement Value *1	Around Air Outlet (A/D conversion value: 0 - 255)	
⑦	Thermosensor 2 Measurement Value *1	Around Air Inlet (A/D conversion value: 0 - 255)	
⑧	Thermosensor 3 Measurement Value	Around Tilt Sensor (A/D conversion value: 0 - 1 023)	
⑨	Thermosensor 3 Reference Value	Thermosensor 3 A/D Conversion Value (0 - 1 023) at angle reset	
⑩	Lamp - Abnormality Check	Cause of Lamp Malfanction	
⑪	Total Usage Time	Projector Cumulative Usage Time	
⑫	Lamp ON - Cumulative Usage Time / Frequency / Cumulative Usage Time	Current	Cumulative Usage Time (actual time), ON Frequency and Cumulative Usage Time (conversion time for 155 W) of the lamp are shown from the left.
⑬		Second	
⑭		First	
⑮	Gamma Correction Data Check	It is distinguished whether gamma data is stored in the flash ROM.	
⑯	Color Unevenness Correction Data Check	It is distinguished whether color unevenness correction data is stored in the flash ROM.	
⑰	Fan Stop Check	Cause of Lamp Malfanction	
⑱	Tilt Sensor Measurement Value	Voltage Value (0.00 - 3.30)	
⑲	Tilt Sensor Reference Value	Tilt Sensor Voltage Value (0.00 - 3.30) at angle reset	
⑳	Tilt Degree *2	Degree of tilt of the projector, that is a value by which temperature correction is given to the tilt sensor A/D conversion value. (When automatic keystone, the keystone distortion is corrected with this value.)	
㉑	Lamp - Judgment for Cumulative Usage more than 2 000 h *3	Judgment for Replacement Time of Lamp	
㉒	Lamp - Reset Frequency of Cumulative Usage Time	Reset Frequency (0 - 255)	

\*1 When detected abnormal temperature (high temperature around the air inlet and/or outlet ports, large difference between temperature around the air inlet/outlet ports), TEMP indicator turned on. If arriving at the critical temperature, the power supply will be shutdown automatically and the indicator will flash.

\*2 When "AUTO KEYSTN (Automatic Keystone)" is set to ON, the keystone distortion is corrected automatically with this value during automatic setup.

\*3 Warning of the lamp cumulative usage time and shutdown use the conversion time for 155 W.



### 3.3. Canceling the self-check mode

Press "MENU" button on the main unit or remote control unit.

## 4 Service Mode

This mode is used to display seven kinds of test patterns [Horizontal lines, Vertical lines, Dots, Crosshatch, White cross, Black cross and White (No pattern)] in the four colors (White, Red, Green and Blue)..

**Note:**

- On the service mode, displays above patterns by each color without test equipment such as PC or SG. Use the service mode for simplified adjustments by your eyes and so on.

### 4.1. Procedure to enter the service mode

Select "SERVICE MODE" on "EXT OPTION" menu and press "ENTER" button on the main unit or remote control unit.

**Note:**

- In the service mode, pressing the up-arrow " ▲ " or down-arrow " ▼ " button allows the test pattern selection and the left-arrow " ◀ " or right-arrow " ▶ " button the color selection (White / Red / Green / Blue).

### 4.2. Canceling the service mode

Press "MENU" button on the main unit or remote control unit.

## 5 Flicker Adjustment Mode

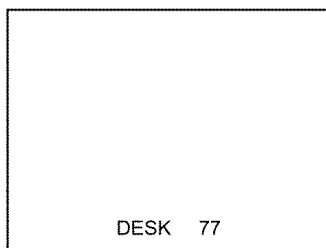
If replacing the optical parts (Analysis / LCD / Lens block) of this projector and/or A-P.C.Board (assembly), enter the flicker adjustment mode and minimize the flicker.

### 5.1. Procedure to enter the adjustment mode

Select "FLICKER ADJ" on "EXT OPTION" menu and press "ENTER" button on the main unit or remote control unit.

**Note:**

"DESK setting (blue)" is displayed when entering the adjustment mode.



Adjustment Display when DESK setting

### 5.2. Adjustment Display and Contents

- Setting value is increased and decreased with the right-arrow " ▶ " and left-arrow " ◀ " buttons.
  - " ◀ ": Decrease, " ▶ ": Increase
    - Adjust the setting value to minimize the flicker on the screen.
    - Execute the adjustment by 6 patterns below.
- The pattern (adjustment display) is switched with the up-arrow " ▲ " and down-arrow " ▼ " buttons.
  - " ▲ ": Forward direction, " ▼ ": Reverse direction
    - There are 6 patterns of "DESK setting (blue)", "DESK setting (red)", "DESK setting (green)", "CEILING setting (blue)", "CEILING setting (red)" and "CEILING setting (green)".
    - The setting value is saved into this projector when the pattern is switched.

### 5.3. Canceling the flicker adjustment mode

Press "MENU" button on the main unit or remote control unit.

**Note:**

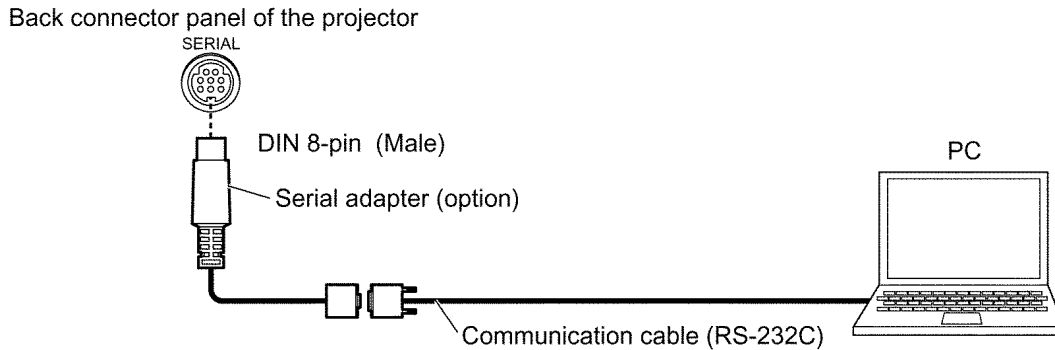
When "MENU" button is pressed, the setting value at that time is saved into this projector and the adjustment mode is canceled.

## 6 Using the SERIAL Connector

The serial connector which is on the back connector panel of the projector conforms to RS-232C standard. This projector can be controlled by a PC which is connected as shown in "6.1. Connection".

For controlling this projector by a PC, requires communication software on the market, and inputs control commands according to communication settings and basic format below.

### 6.1. Connection

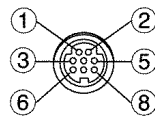


**Note:**

Use a proper communication cable which is suitable for the PC to connect the optional serial adapter, which is connected with SERIAL connector of this projector, and the PC.

### 6.2. Pin Layout and Signal Names for SERIAL Connector

DIN 8-pin (female)  
seen from outside



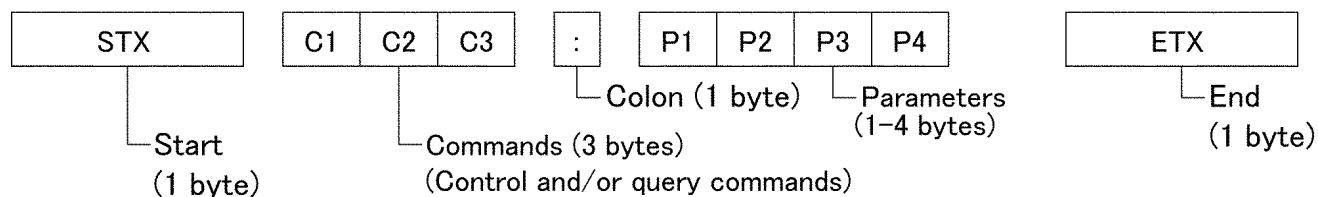
Pin No	Signal Name	Contents
3	RXD	Receive data
4	GND	Ground
5	TXD	Transmit data
1	---	Connected internally
2	---	
6	---	
7	---	NC
8	---	NC

### 6.3. Communication Settings

Signal Level		Contents	Description
Sync. method	Conforms to RS-232C standard	Asynchronous	Synchronizes every 1 character (8 bits)
Baud rate		9 600 bps	Data transfer speed
Parity		None	Error detection method
Character length		8 bits	Number of bit composing 1 character
Stop bit		1 bit	Uses stop bit when asynchronous method
X parameter		Not used	
S parameter		Not used	

## 6.4. Basic Format

The data sent from the PC to the projector is transmitted in the format shown below.



### Notes:

- If sending multiple commands, check that a call back has been received from the projector for 1 command before sending the next command.
- When a command which does not require parameters is sent, the colon (:) is not required.

## 6.5. Control / Query Commands

### Control Commands

Command Name (Parameter format is shown in <>)	Function / Contents	Call back from Projector (Parameter format is shown in <>)	Minimum Value of Parameter	Maximum Value of Parameter
PON *1	POWER ON	PON	—	—
POF *1	POWER OFF	POF	—	—
AVL : <pl>	VOLUME	AVL : <pl>	0	63
IIS : <input signal>	INPUT SELECT	IIS : <input signal>	—	—
OST	STANDARD	OST	—	—
OFZ : <off_on>	FREEZE	OFZ : <off_on>	0	1
OEN :	ENTER	OEN	—	—
VPM : <picture mode>	PICTURE MODE	VPM : <picture mode>	—	—
<NAT>	NATURAL	<NAT>	—	—
<STD>	STANDARD	<STD>	—	—
<DYN>	DYNAMIC	<DYN>	—	—
<BBD>*2	BLACK-BD	<BBD>	—	—
AUU	VOLUME UP	AUU		
AUD	VOLUME DOWN	AUD		
OMN	MENU	OMN		
OCU	CURSOR UP	OCU		
OCD	CURSOR DOWN	OCD		
OCL	CURSOR LEFT	OCL		
OCR	CURSOR RIGHT	OCR		
OAS	AUTO SETUP	OAS		
OSH *1	SHUTTER	OSH		
OIX	INDEX WINDOW (Double)	OIX		
DZU	D.ZOOM UP	DZU		
DZD	D.ZOOM DOWN	DZD		
OLP : <lamp power> *1 *3	LAMP POWER	OLP : <lamp power>	0	1

\*1 Do not transmit the PON, POF, OSH and/or OLP commands continuously in a short time.

The lamp may be damaged and/or cause malfunctions.

\*2 The BBD parameter is non-correspondence to PT-LB10VU/E.

\*3 The OLP command is invalid at a no signal.

## Query Commands

Query Command	Contents	Call back from Projector (Parameter format is shown in < >)
QPW	POWER CONDITION	<power condition>
QIN	INPUT SIGNAL	<input signal>
QAV	VOLUME LEVEL	<pl>
QVC	COLOR LEVEL	<pl>
QVT	TINT LEVEL	<pl>
QVB	BRIGHT LEVEL	<pl>
QVR	CONTRAST LEVEL	<pl>
QVS	SHARPNESS LEVEL	<pl>
QWR	WHITE BALANCE LEVEL (RED)	<pl>
QWG	WHITE BALANCE LEVEL (GREEN)	<pl>
QWB	WHITE BALANCE LEVEL (BLUE)	<pl>
QHP	H-POSITION LEVEL	<pl>
QVP	V-POSITION LEVEL	<pl>
QCP	COLOR PHASE LEVEL	<pl>
QDC	DOT CLOCK LEVEL	<pl>
QSP	INSTALLATION	<installation>
QLG	LANGUAGE	<language>
QPM	PICTURE MODE	<NAT>=NATURAL <STD>=STANDARD <DYN>=DYNAMIC <BBD>=BLACK-BD *
QFZ	FREEZE	<off_on>
QLP	LAMP POWER	<lamp power>
Q\$L	LAMP ON TIME	<acctch>
QSH	SHUTTER	<off_on>
QKS	KEystone	<pl>
QTE	COLOR TEMPERATURE	<color temp.>

\* The BBD parameter is non-correspondence to PT-LB10VU/E.

## Parameters

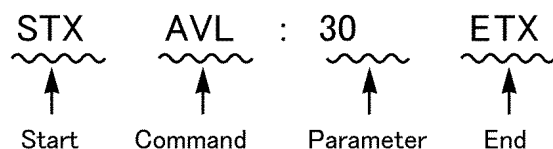
Parameter Format	Parameter Size (Byte)	Parameter Definition
<pl>	3 (provided that approves of 1 byte or 2 bytes when control)	Decimal notation without plus/minus sign (0 to 999), Decimal notation with plus/minus sign (-99 to +99) (Returns 3 bytes call back from the projector. Decimal notation without plus/minus sign (000, 001, 002, ..., 999), Decimal notation with plus/minus sign (-99, -98, ..., -01, +00, +01, ..., +99) )
<off__on>	1	0=OFF, 1=ON
<input signal>	3	VID=VIDEO, SVD=S-VIDEO, RG1=RGB1, NWP = NETWORK (PT-LB10NTU/E only)
<installation>	1	0=FRONT/DESK, 1=REAR/DESK, 2=FRONT/CEILING, 3=REAR/CEILING
<language>	3	ENG=English, DEU=German, FRA=French, ESP=Spanish, ITA=Italian, JPN=Japanese, CHI=Chinese, KOR=Korean, RUS=Russian
<power condition>	3	000=Power OFF, 001=Power ON
<acctch>	4	Decimal notation without plus/minus sign: 0000 hour to 9999 hours
<lamp power>	1	0=LOW, 1=HIGH
<color temp.>	1	0=LOW, 1=STD, 2=HIGH

\* If an incorrect command is sent from the PC, the "ER401" command will be sent from the projector to the PC.

### [Example]

When controls the audio volume to +30 by a PC

(Sends commands as the following:)



· When a command which does not require parameters is sent, the colon (:) is not required.

## 6.6. Communication Cable Specifications

Serial adapter		at the PC (DTE)			
---	---	1	NC	NC	1
5	2	2			2
3	3	3			3
---	---	4	NC	NC	4
4	5	5			5
6	6	6	DSR	NC	6
1	7	7			7
2	8	8			8
	---	9	NC	NC	9

## 6.7. Signal Selector Connecting Cable Specifications

When connecting to a signal selector (ex. TW-SW S62J), use a cable with specifications below.

Connecting method: Connects a video signal cable from the signal selector to "VIDEO IN", and an RGB signal cable to "RGB1 IN".

At the signal selector D-sub 9p (male)		At the serial adapter (DCE) D-sub 9p (male)		Serial adapter	
Signal Name	Pin No.	Pin No.	Signal Name	Pin No. (cable side)	Pin No. (projector side)
NC	1	1	NC	---	---
RD Receive data	2	2	SD Transmit data	2	5
SD Transmit data	3	3	RD Receive data	3	3
NC	4	4	NC	---	---
GND Ground	5	5	GND Ground	5	4
NC	6	6	DSR	6	6
RS Transmit request	7	7	CS Transmit permission	7	1
CS Transmit permission	8	8	RS Transmit request	8	2
NC	9	9	NC	---	---

**Note:**

Set VP control terminal switch of the signal selector to VP TYPE "B".

## 7 Disassembly Instructions

### Warning:

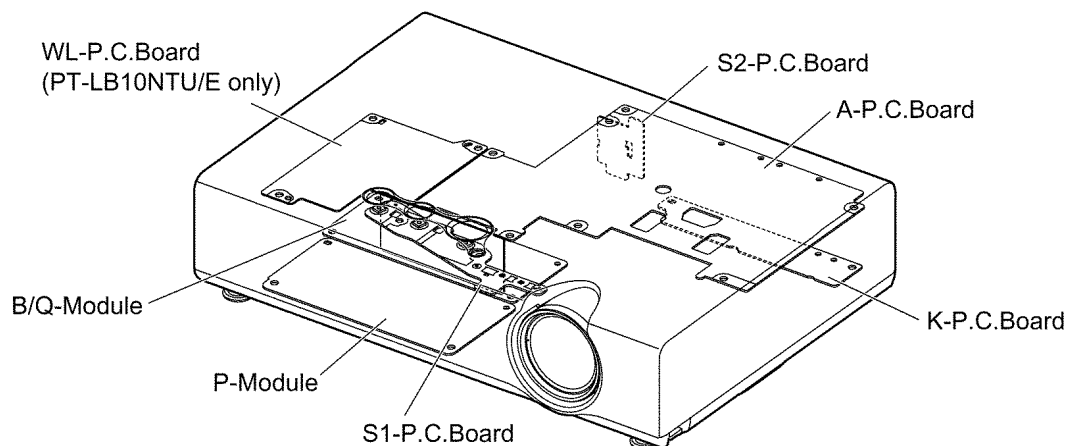
- Be sure to unplug the power cord from the power outlet before disassembling this projector.

### Caution:

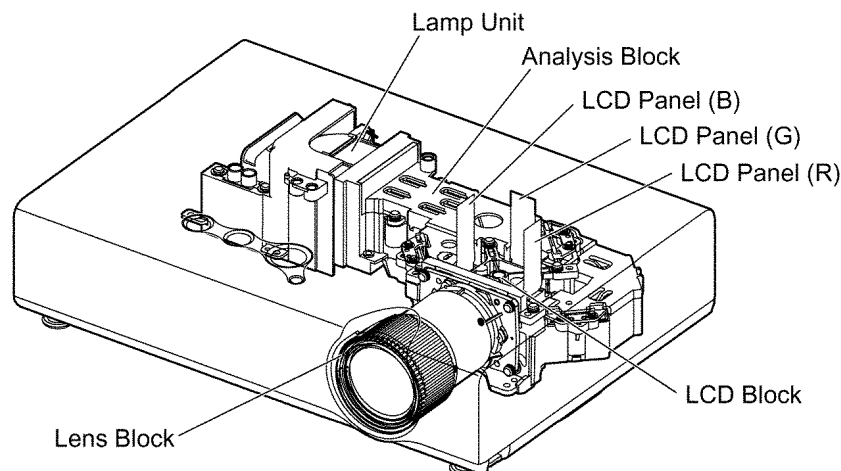
- While turning over a printed circuit board, be sure to put a insulating material under it to prevent a short circuit.
- Printed circuit boards and wires must not be pulled forcibly, but be handled carefully.
- Connectors also must be handled carefully.
- After repairing this projector, be sure to put back the wires and connectors to the original condition.

### 7.1. Printed Circuit Board and Main Parts Location

#### Electrical Parts



#### Optical Parts

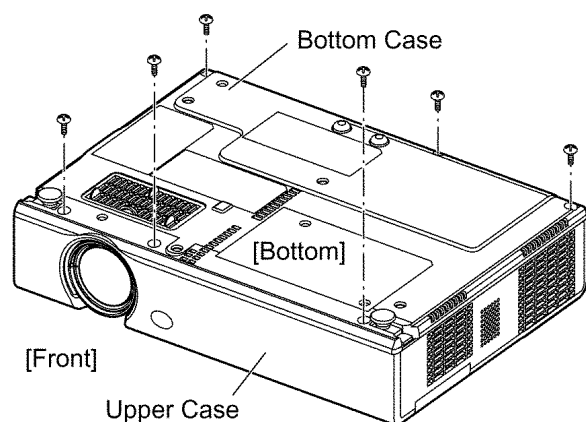


## 7.2. Removal of Upper Case

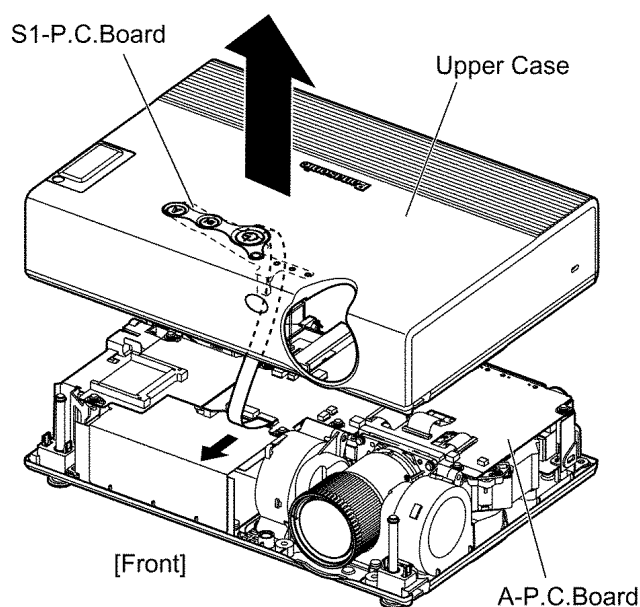
### Note.

- For PT-LB10NTU/E, remove a wireless card before disassembling.

1. Turn the projector upside down.
2. Unscrew the 6 screws.

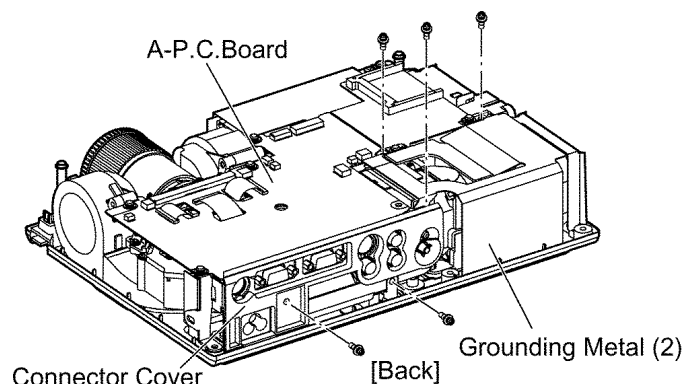


3. Return the projector to the normal position.
4. Lift the upper case upward (approx. 10 cm).
5. Disconnect the cable from S1-P.C.Board (connector A8 on A-P.C.Board) and remove the upper case.

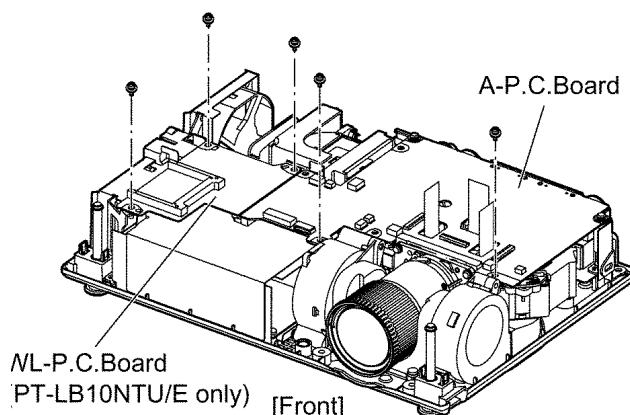


## 7.3. Removal of A-P.C.Board

1. Remove the upper case according to the section 7.2. "Removal of Upper Case".
2. Unscrew the 1 screw on the backside and remove the connector cover.
3. Unscrew the 1 screw fixing the connector metal fittings on the backside.
4. Unscrew the 3 screws and remove the grounding metal (2).



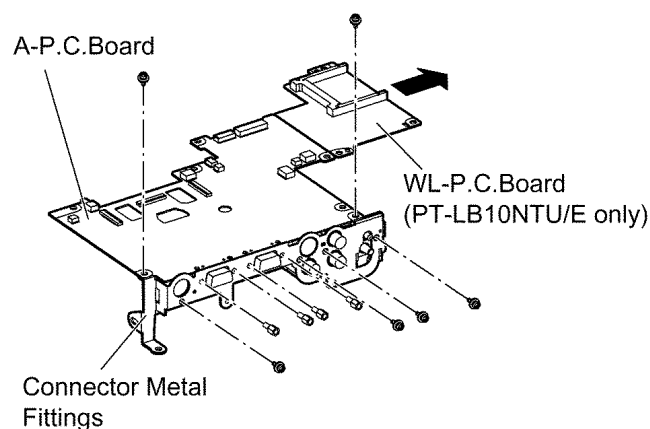
5. Disconnect the connectors from/to the A-P.C.Board.
6. Unscrew the screws (PT-LB10NTU/E: 5, Others: 2) and remove the A-P.C.Board block (PT-LB10NTU/E: with WL- and S2-P.C.Boards, Others: with S2-P.C.Board).



7. While disconnecting the 2 connectors, remove the WL-P.C.Board from the A-P.C.Board block (PT-LB10NTU/E only).
8. Unscrew the 10 screws and remove the connector metal fittings.

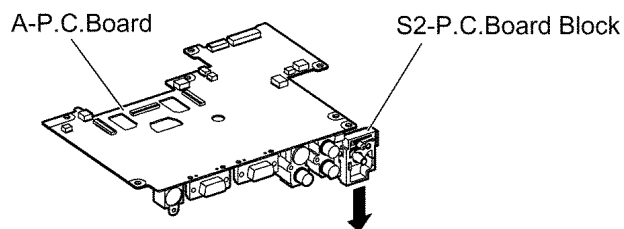
### Note:

- Because the S2-P.C.Board block is attached, work carefully when removing the connector metal fittings.



9. While disconnecting the connector between A- and S2-P.C.Boards, remove the S2-P.C.Board block.



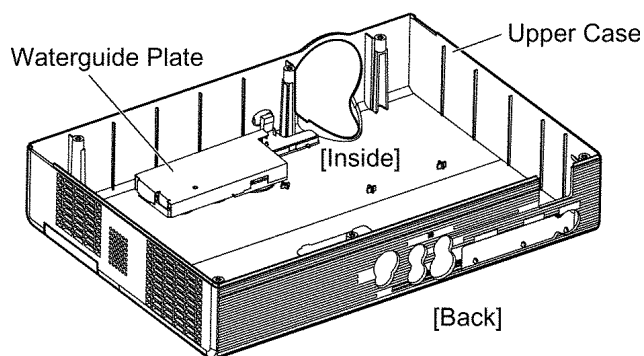


## 7.4. Removal of WL-P.C.Board (PT-LB10NTU / E only)

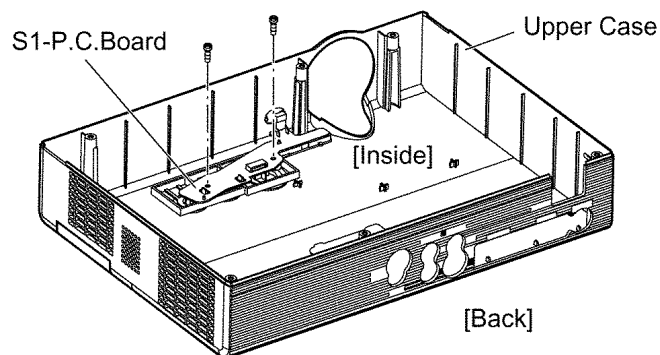
Remove the WL-P.C.Board according to the steps 1 through 6 in the section 7.3. "Removal of A-P.C.Board".

## 7.5. Removal of S1-P.C.Board

1. Remove the upper case according to the section 7.2. "Removal of Upper Case".
2. Remove the water guide plate.



3. Unscrew the 2 screws and remove the S1-P.C.Board.

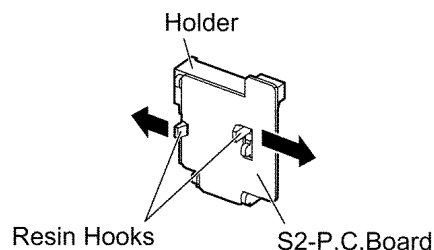


## 7.6. Removal of S2-P.C.Board

1. Remove the S2-P.C.Board block according to the section 7.3. "Removal of A-P.C.Board".
2. Remove the holder while expanding the resin hooks outside.

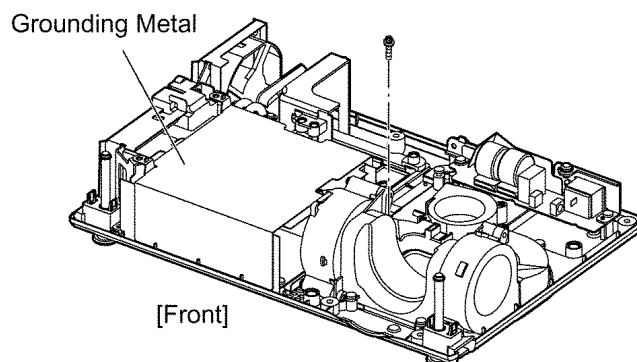
### Note:

- Work carefully not to damage the resin hook.

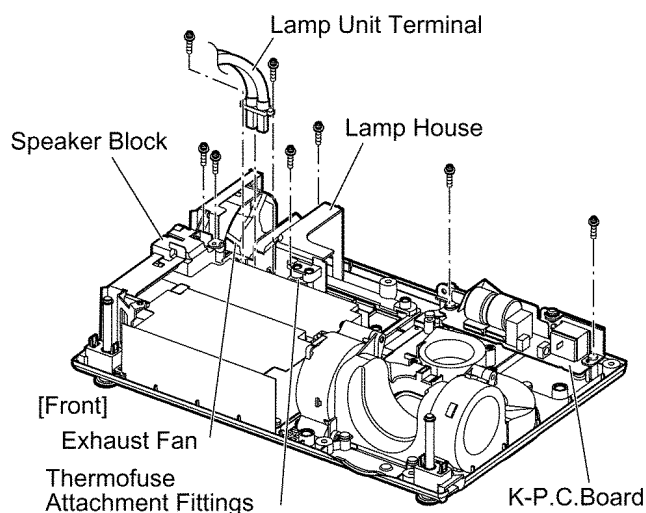


## 7.7. Removal of K-P.C.Board

1. Remove the analysis block, LCD block and lens according to the steps 1 through 3 in the section 7.11. "Removal of Analysis Block and Lens".
2. Unscrew the screws (PT-LB10NTU/E: 1, Others: 3) and remove the grounding metal.



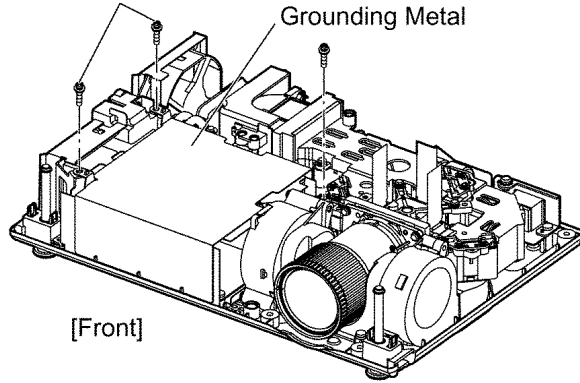
3. Unscrew the 2 screws and remove the lamp unit terminal.
4. Unscrew the 2 screws and remove the exhaust fan and speaker block.
5. Unscrew the 2 screws and remove the lamp house and thermofuse attachment fittings.
6. Unscrew the 2 screws and remove the K-P.C.Board.



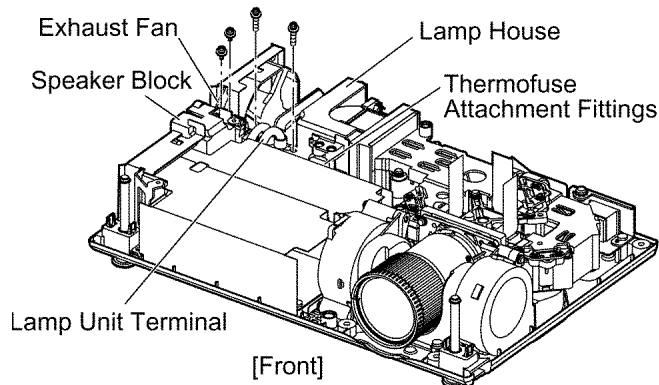
## 7.8. Removal of B / Q-Module

1. Remove the A-P.C.Board block according to the steps 1 through 6 in the section 7.3. "Removal of A-P.C.Board".
2. Unscrew the screws (PT-LB10NTU/E: 1, Others: 3) and remove the grounding metal.

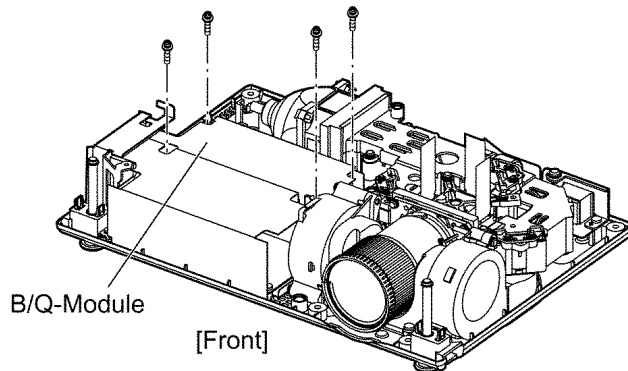
LB10\*/LB10V\*/LB10S\*



3. Unscrew the 2 screws and remove the lamp unit terminal.
4. Unscrew the 3 screws and remove the lamp house and thermofuse attachment fittings.
5. Unscrew the 1 screws and remove the exhaust fan and speaker block.



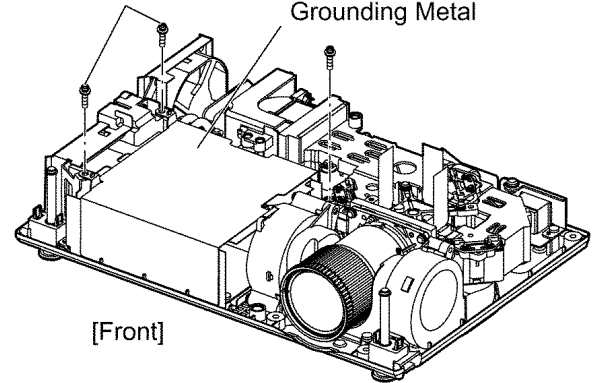
6. Unscrew the 4 screws and remove the B/Q-Module.



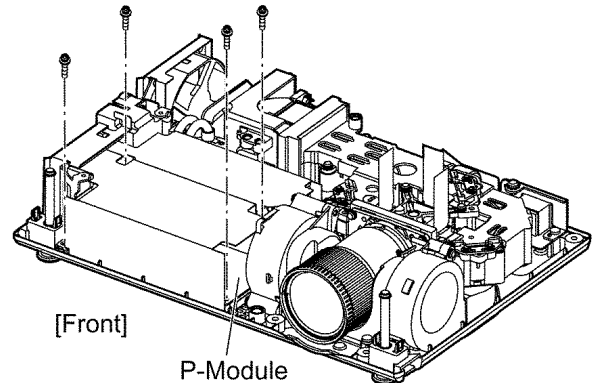
## 7.9. Removal of P-Module

1. Remove the A-P.C.Board block according to the steps 1 through 6 in the section 7.3. "Removal of A-P.C.Board".
2. Unscrew the screws (PT-LB10NTU/E: 1, Others: 3) and remove the grounding metal.

LB10\*/LB10V\*/LB10S\*

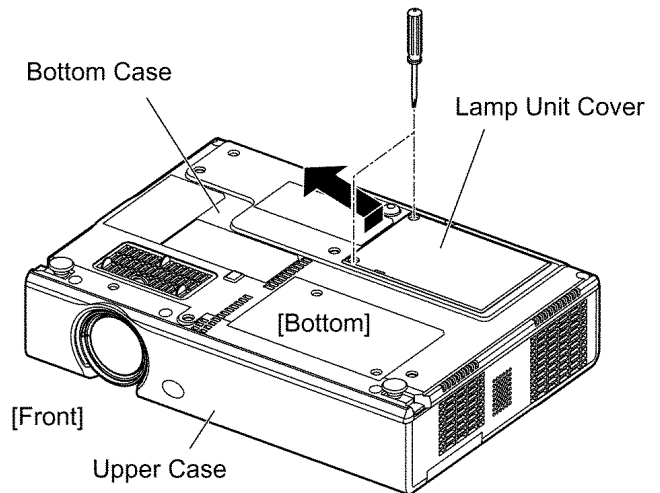


3. Unscrew the 4 screws and remove the P-Module.

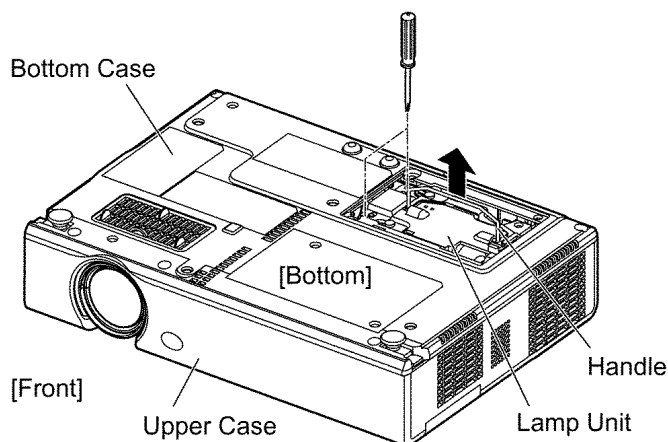


## 7.10. Removal of Lamp Unit

1. Turn the projector upside down.
2. Loosen the 2 screws until they idle, remove the lamp unit cover.

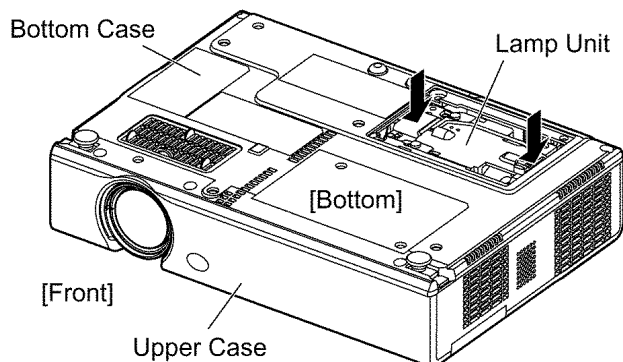


3. Loosen the 2 screws until they idle, remove the lamp unit with the handle.

**Note:**

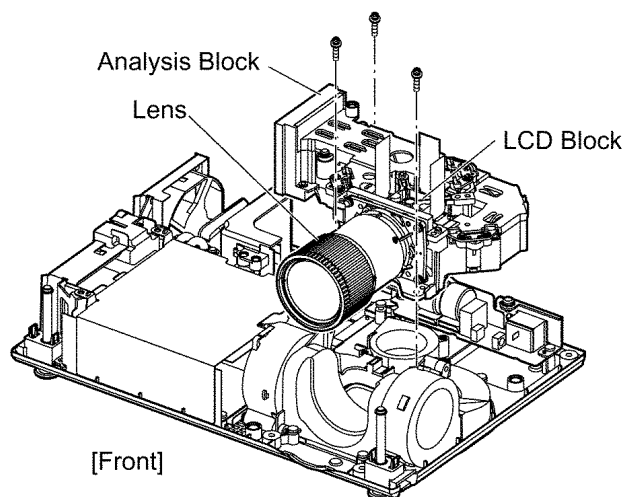
- When installing the lamp unit (or a new one) in the main unit, place it in a specified position and press the connector side and the opposite side of the lamp unit (arrow positions shown in the figure below), and confirm the lamp unit is inserted securely.

Then, tighten the 2 screws fixing the lamp unit, and attach the lamp unit cover.



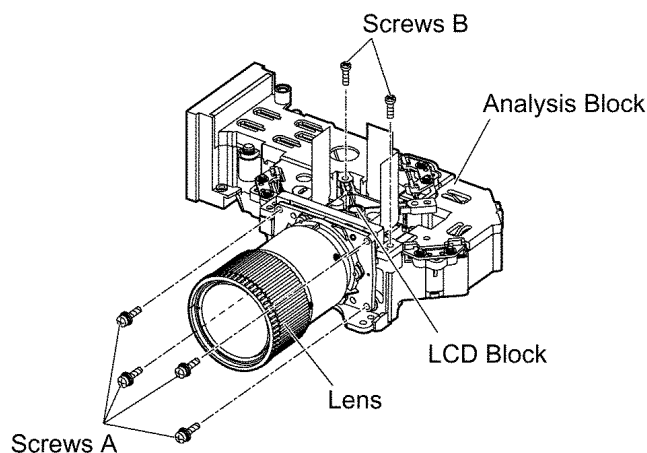
## 7.11. Removal of Analysis Block and Lens

- Remove the lamp unit according to the section 7.10. "Removal of Lamp Unit".
- Remove the A-P.C.Board block according to the steps 1 through 6 in the section 7.3. "Removal of A-P.C.Board".
- Unscrew the 3 screws and remove the analysis block, LCD block and lens.



- Unscrew the 4 screws A and remove the lens.

- Unscrew the 2 screws B and remove the LCD block (the analysis block remains).

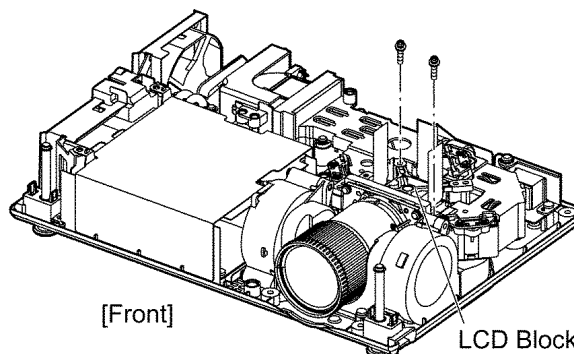


## 7.12. Removal of LCD Block

- Remove the A-P.C.Board block according to the steps 1 through 6 in the section 7.3. "Removal of A-P.C.Board".
- Unscrew the 2 screws and remove the LCD block.

**Note:**

- Be careful not to touch the surface of prism and LCD panel.



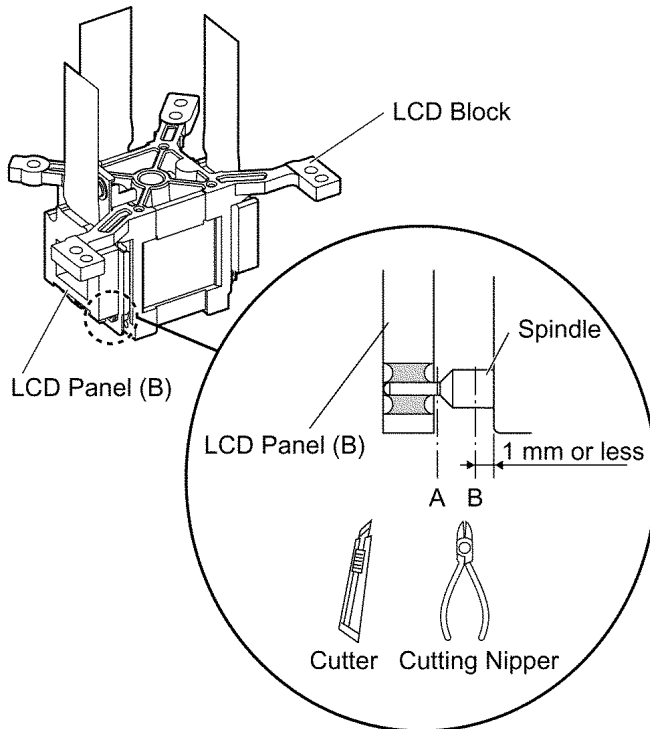
## 7.13. Replacement of LCD Panel

- The procedure is described as an example of LCD panel (B).

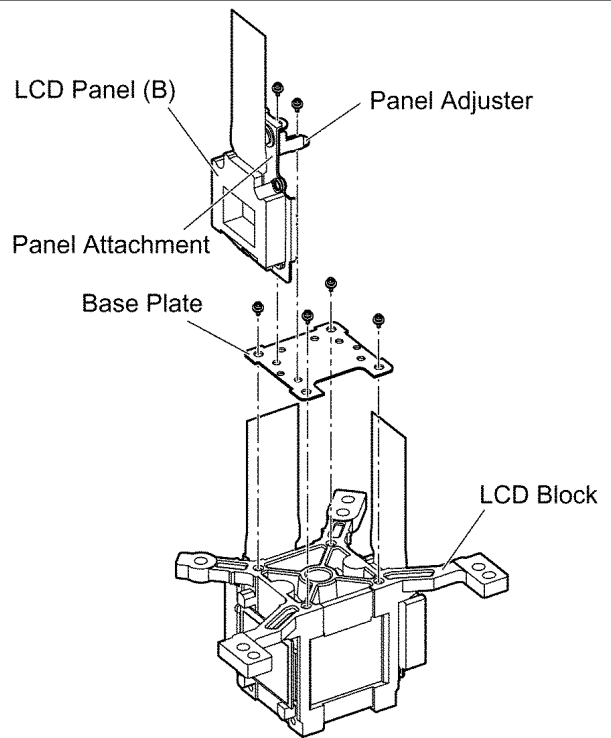
1. Remove the LCD block according to the section 7.12. "Removal of LCD Block".
2. Cut the 4 LCD panel installation spindles at the position A and remove the LCD panel.
3. Cut the 4 LCD panel installation spindles at the position B and remove them.

**Notes:**

- Work carefully not to apply external force around the spindle part by using a cutter, cutting nipper or the like for cutting the spindle.
- Adjust the height after the spindle is cut to 1 mm or less.



4. Attach the base plate with 4 screws.
5. Tighten the 2 screws temporarily just until new LCD panel (with the panel attachment and panel adjuster) can be shifted by your fingers.



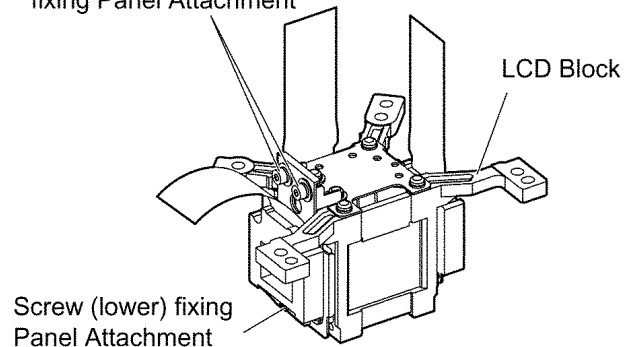
6. Reassemble the projector in the reverse order of disassembling, but leave the upper case and the screws fixing the A-P.C.Board block as they are removed.
7. Adjust the convergence according to the section 8.4. "Convergence Adjustment".
8. After the adjustment, while paying attention not to vary the adjusting result, tighten the 2 screws (upper) fixing the panel attachment temporarily with a hexagon head wrench.

**Notes:**

- Prepare a hexagon head wrench processed short.
- Service tool (Part No. TZSH070010), hexagon head wrench processed short, is available.

9. Remove the LCD block again.
10. Tighten the 3 screws fixing the panel attachment.

Hexagon socket screws (upper)  
fixing Panel Attachment



**Note:**

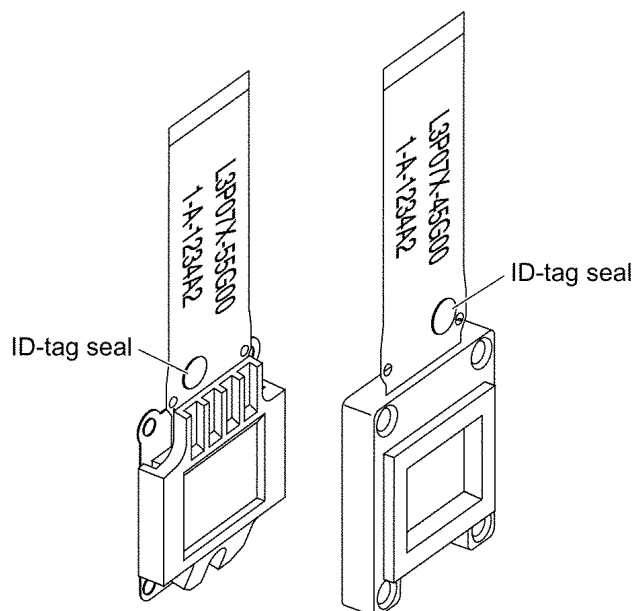
- For PT-LB10NTU/E, the screw (lower) fixing the panel attachment holds the installation of the LCD panel concurrently.

11. Reassemble the projector as it was.

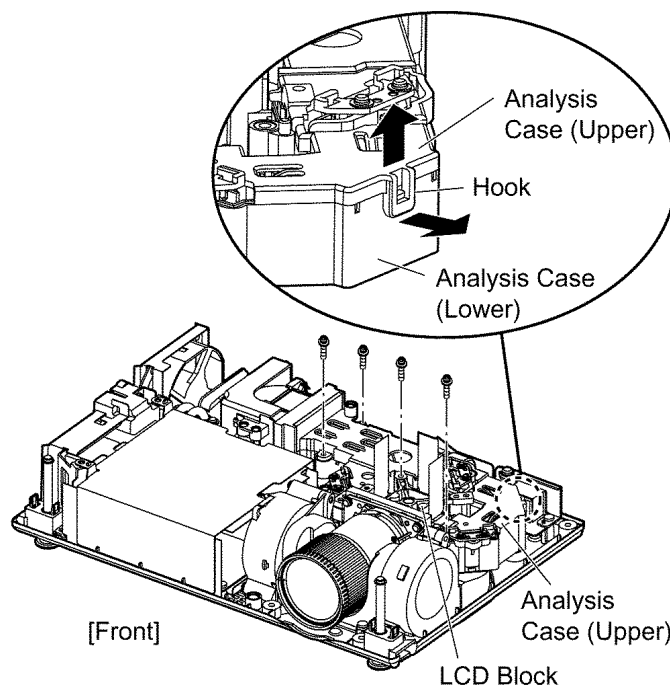
## 7.14. LCD Panel Discrimination

ID-tag seal color	LCD panel
Red	LCD panel (R)
Blue	LCD panel (B)
(No seal)	LCD panel (G)

- Since the ID-tag seal is pasted to the FPC of LCD Panel, (R), (G) or (B) can be easily identified by the color of the seal.
- Finally, identify the panel color by the part number printed on the FPC.



hook of it outside.



### Note:

- Because the hook is damaged easily, be careful not to expand it excessively.

### 4. Replace the incidence polarizer.

### Note:

- Be careful not to touch the surface of incidence polarizer.

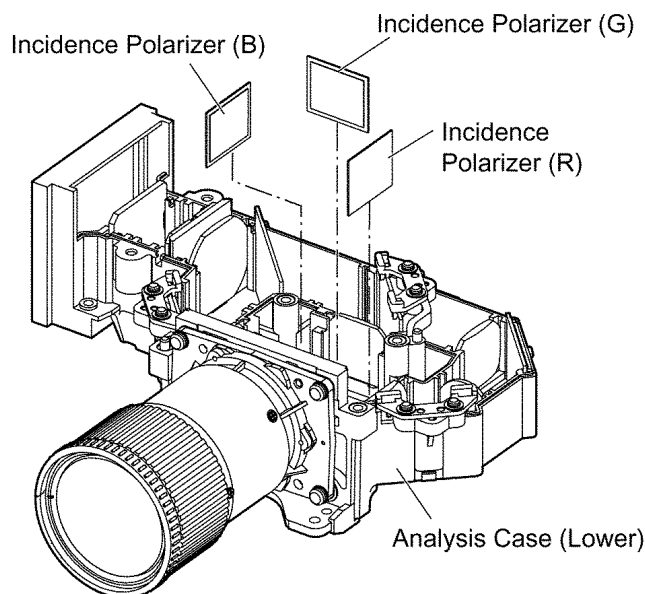
## 7.15. LCD Panel Combination

- Part number is printed on the FPC of LCD Panel.
- When replacing LCD Panel, use a component which has the same part number as the original.

Model number	LCD panel	Part No.
PT-LB10NTU/E PT-LB10U/E	R	L5BDAXQ00143 (L3P07X-55G00)
	G	L5BDAXQ00144 (L3P07X-55G00)
	B	L5BDAXQ00145 (L3P07X-55G00)
PT-LB10VU/E	R	L5BDAXQ00131 (L3P07X-45G00)
	G	L5BDAXQ00132 (L3P07X-45G00)
	B	L5BDAXQ00133 (L3P07X-45G00)
PT-LB10SU/E	R	L5BDAXN00073 (L03P07S-46G00)
	G	L5BDAXN00074 (L03P07S-46G00)
	B	L5BDAXN00075 (L03P07S-46G00)

## 7.16. Replacement of Incidence Polarizer

1. Remove the LCD block according to the section 7.12. "Removal of LCD Block".
2. Unscrew the 2 screws.
3. Remove the analysis case (upper) while expanding the

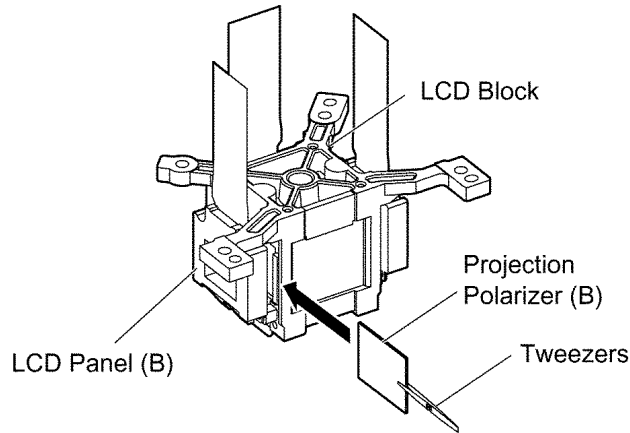


## 7.17. Replacement of Projection Polarizer

- The procedure is described as an example of projection polarizer (B).
1. Remove the LCD block according to the section 7.12. "Removal of LCD Block".
  2. Remove the projection polarizer which requires replacing. (The projection polarizer is secured with adhesive tape.)

**Notes:**

- Be careful not to damage peripheral components (prism, LCD panel, etc.).
- Use tweezers.

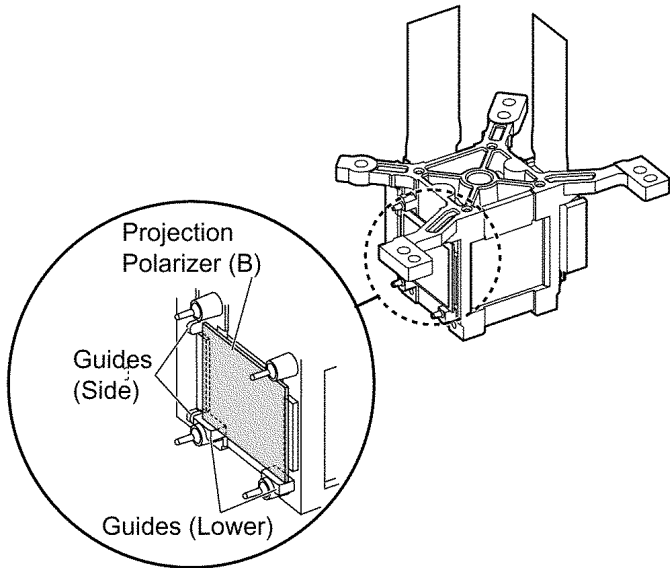


## 3. Install new projection polarizer.

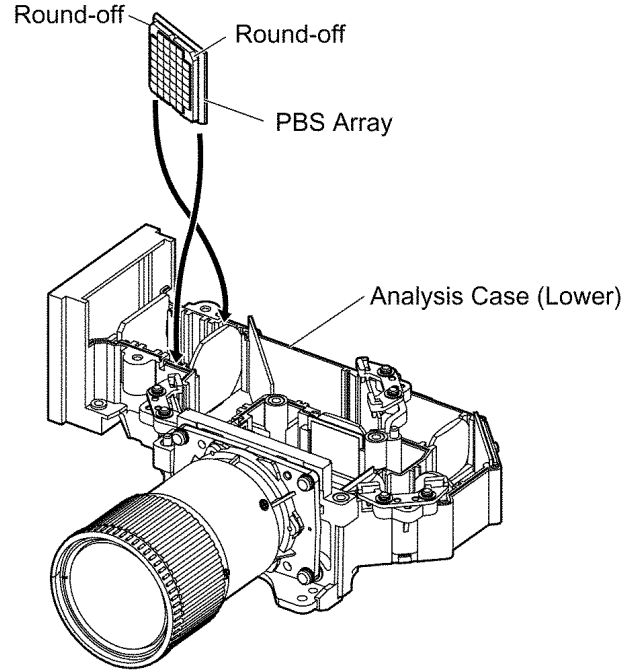
- Put adhesive tape on the projection polarizer.
- Stick the projection polarizer on the specified position.

**Notes:**

- Align the projection polarizer with the guides (lower, side) of LCD block.
  - Be careful not to touch the surface of projection polarizer.
  - Use tweezers.
- Press the adhesive part and secure the projection polarizer.

**Note:**

- Be careful not to mistake the direction (inside and outside, upper and lower).
- Be careful not to touch the surface of PBS array.

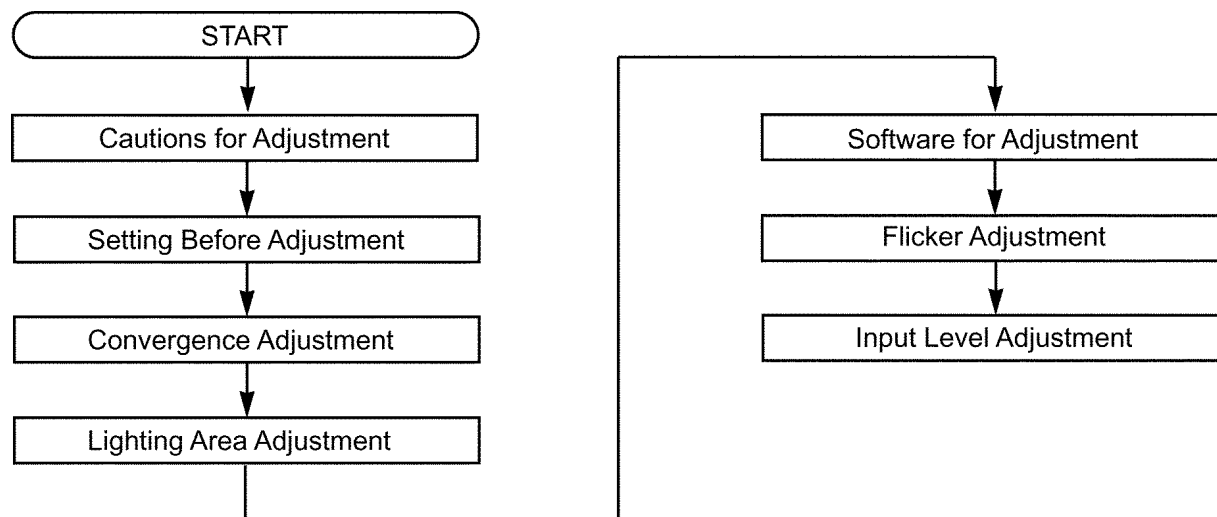


## 7.18. Replacement of PBS Array (Analysis Block)

- Remove the analysis case (upper) according to the steps 1 through 3 in the section 7.16. "Removal of Incidence Polarizer".
- Remove the PBS array.
- Install new PBS array.

## 8 Measurement and Adjustments

### 8.1. Adjustment Procedure Flowchart

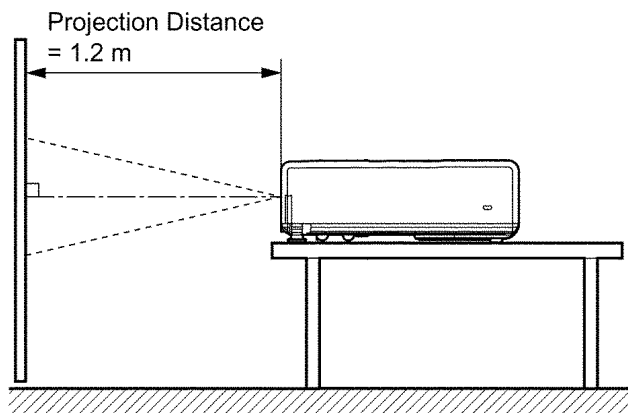


### 8.2. Cautions for Adjustment

- Never unplug the power cord until the power indicator on the projector illuminates red.
- To maintain and ensure safety, always use the designated components for replacement parts.
- If removing any clamps, lead wires or connectors, always place them back in their proper locations.
- Be careful not to damage the lead wires or components when using a soldering iron or similar tool.

### 8.3. Setting Before Adjustment

- Set up the projector to obtain the projection distance below.
- Turn the zoom ring of the projector to obtain the largest size of the picture.



### 8.4. Convergence Adjustment

Execute this adjustment when replacing the LCD panel .

#### 8.4.1. Tools to be used

Service Kit (Part No. TZSH07015): This kit is composed of 3 extension flexible cables and 3 connector extension cables.

#### Note:

- Consult your dealer or Authorized Service Center for the service kit.

#### 8.4.2. Preparation

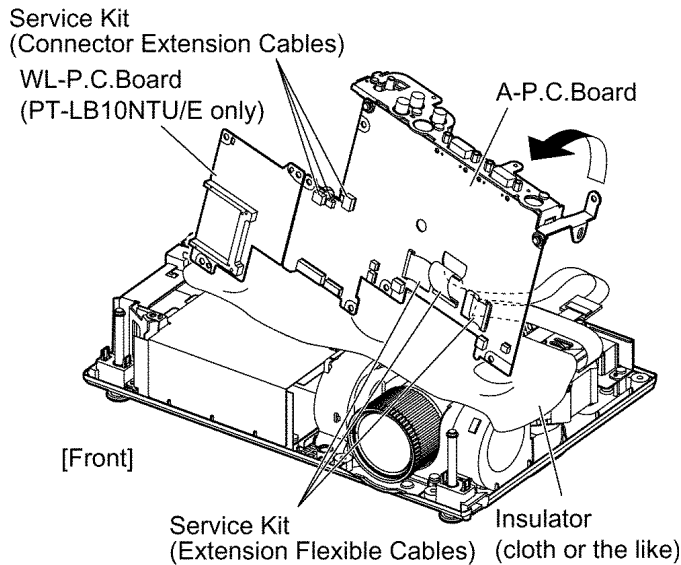
1. Loosen 2 screws fixing the panel adjuster and 3 screws fixing the panel attachment, then tighten the 5 screws temporarily just until the LCD panel can be shifted by your fingers.

#### Note:

- See figures in the section 7.13. "Replacement of LCD Panel" for 2 screws fixing the panel adjuster and 3 screws fixing the panel attachment.
2. Reassemble the projector in the reverse order of disassembling, but leave the upper case and the screws fixing the A-P.C.Board block as they are removed.
  3. Connect the service kit (extension cables).
    - Each flexible cable of LCD Panels (R/G/B) - Connectors (A1/A2/A3) on A-P.C.Board
    - Power fan connector - Connector (A16) on A-P.C.Board
    - Exhaust fan connector - Connector (A17) on A-P.C.Board
    - PBS fan connector - Connector (A19) on A-P.C.Board
  4. Covering with an insulator (cloth or the like) to prevent a short circuit, set the A-P.C.Board block on the main unit.

#### Note:

- Handle with care not to apply external force to connecting parts which connect the main unit and A-P.C.Board.



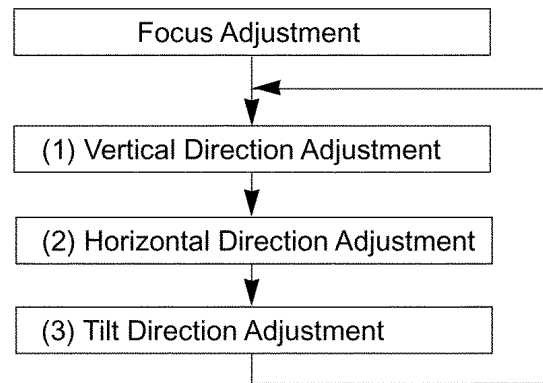
### 8.4.3. Adjustment Procedure

Prepare 2 pieces of thick black paper (23 mm × 100 mm) that can be shaded.

- Cover and shade LCD panels with the paper except the panel for adjustment.

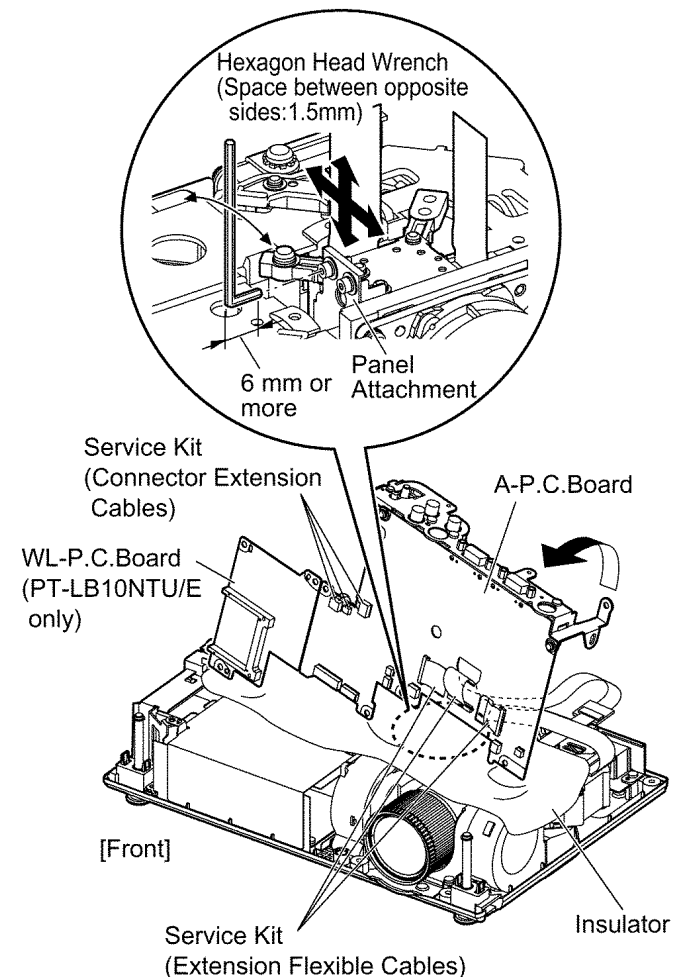
#### 8.4.3.1. When replacing every LCD panel or LCD block

1. Display the green crosshatch pattern and adjust the lens focus.
2. Adjust focus by shifting the panel adjuster for LCD panel (G) back and forth, then tighten the 2 screws.
3. Display green and blue crosshatch patterns.
4. Adjust the LCD panel (B) position so that the vertical center of blue crosshatch pattern is overlapped with the vertical center of green crosshatch pattern.
5. Adjust the LCD panel (B) position so that the horizontal center of blue crosshatch pattern is overlapped with the horizontal center of green crosshatch pattern.
6. Correct the tilt of the blue crosshatch pattern by adjusting the LCD panel (B) position.
7. Adjust the LCD panel (R) position similarly.
8. Display green, red and blue crosshatch patterns and confirm the convergence. If it is necessary, fine adjust the convergence so that the red and/or blue crosshatch pattern is overlapped with green one.



Repeat steps (1) to (3) until the green and blue crosshatch patterns merge into a cyan pattern.

9. After the adjustment, reassemble the projector according to the steps 8 through 11 in the section 7.13. "Replacement of LCD Panel".



#### 8.4.3.2. When replacing single LCD panel (R, G or B)

- The procedure is described as an example when LCD panel (B) is replaced.

1. Display the green crosshatch pattern and adjust the lens focus.
2. Display green and blue crosshatch patterns.
3. Adjust focus by shifting the panel adjuster for LCD panel (B)



back and forth, then tighten the 2 screws.

4. Adjust the LCD panel (B) position so that the vertical center of blue crosshatch pattern is overlapped with the vertical center of green crosshatch pattern.
5. Adjust the LCD panel (B) position so that the horizontal center of blue crosshatch pattern is overlapped with the horizontal center of green crosshatch pattern.
6. Correct the tilt of the blue crosshatch pattern by adjusting the LCD panel (B) position.
7. Display green, red and blue crosshatch patterns and confirm the convergence. If it is necessary, fine adjust the convergence so that the red and/or blue crosshatch pattern is overlapped with green one.

## 8.5. Lighting Area Adjustment

### 8.5.1. Tools to be used

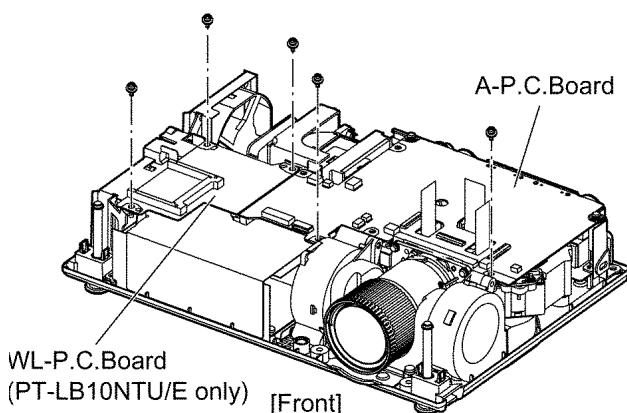
Service Kit (Part No. TZSH07015): This kit is composed of 3 extension flexible cables and 3 connector extension cables.

**Note:**

- Consult your dealer or Authorized Service Center for the service kit.

### 8.5.2. Preparation

1. Remove the connector panel and grounding metal (2) according to the steps 1 through 4 in the section 7.3. "Removal of A-P.C.Board".
2. Unscrew the screws (PT-LB10NTU/E: 5, Others: 2).



3. Connect the service kit (extension cables).

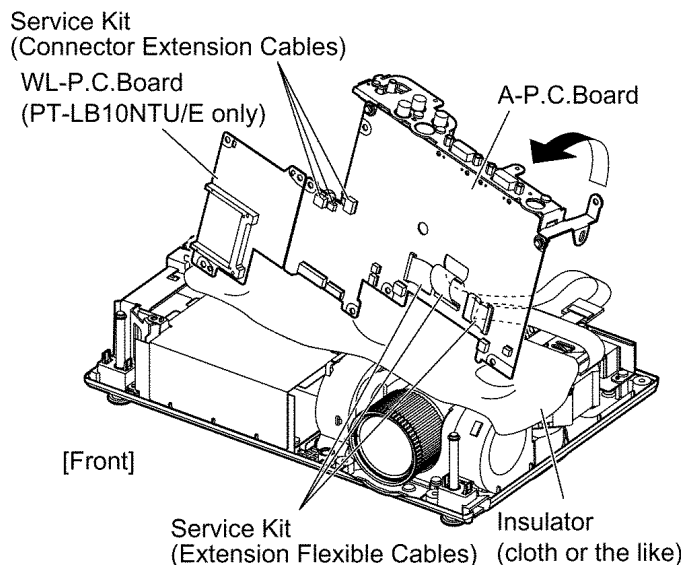
- Each flexible cable of LCD Panels (R/G/B) - Connectors (A1/A2/A3) on A-P.C.Board

- Power fan connector - Connector (A16) on A-P.C.Board
- Exhaust fan connector - Connector (A17) on A-P.C.Board
- PBS fan connector - Connector (A19) on A-P.C.Board

4. Covering with an insulator (cloth or the like) to prevent a short circuit, set the A-P.C.Board block on the main unit.

**Note:**

- Handle with care not to apply external force to connecting parts which connect the main unit and A-P.C.Board.



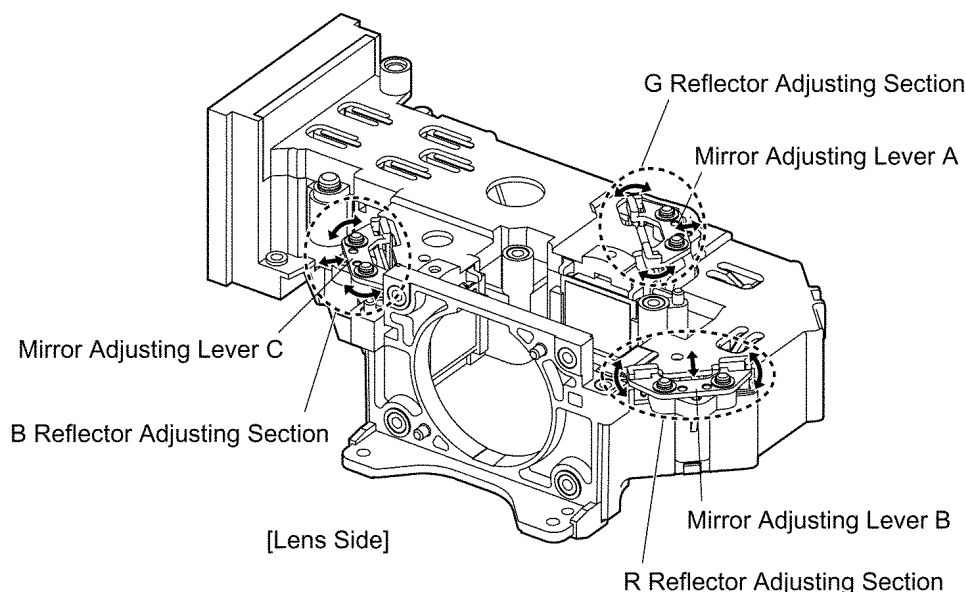
### 8.5.3. Adjustment Procedure

#### 8.5.3.1. Outline

When the lighting area is off from the adjustment and color unevenness appears, adjust the lighting area into correct position.

Symptom	Measure
Magenta unevenness	G Reflector Adjustment
Cyan unevenness	R Reflector Adjustment
Yellow unevenness	B Reflector Adjustment

- Shifting the mirror adjusting lever horizontally, adjust color unevenness on the screen upper/lower sides.
- Twisting the mirror adjusting lever, adjust color unevenness on the screen right/left sides.



[Above figure is shown only the analysis block for explanation.]

### 8.5.3.2. G Reflector Adjustment

1. Turn on the power and display 100 % white pattern on the screen.
2. Loosen the 2 screws fixing the mirror adjusting lever A just until the lever can be shifted.
3. Adjust the mirror adjusting lever A position to minimize color unevenness on the screen by shifting the lever in arrow directions.
4. Tighten the 2 screws.

### 8.5.3.3. R Reflector Adjustment

1. Turn on the power and display 100 % white pattern on the screen.
2. Loosen the 2 screws fixing the mirror adjusting lever B just until the lever can be shifted.
3. Adjust the mirror adjusting lever B position to minimize color unevenness on the screen by shifting the lever in arrow directions.
4. Tighten the 2 screws.

### 8.5.3.4. B Reflector Adjustment

1. Turn on the power and display 100 % white pattern on the screen.
2. Loosen the 2 screws fixing the mirror adjusting lever C just until the lever can be shifted.
3. Adjust the mirror adjusting lever C position to minimize color unevenness on the screen by shifting the lever in arrow directions.
4. Tighten the 2 screws.

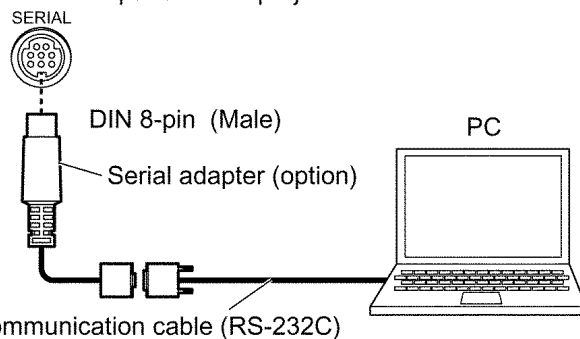
## 8.6. Software for Adjustment

### 8.6.1. Outline

- This projector needs computer-aided adjustments.
- After the software adjustments, this projector must be turned off and on again to memorize the settings.

- Connect the cable between the projector and a PC as shown below.
- Updating the software will change the version number.

Back connector panel of the projector



### 8.6.2. Operating Procedure

1. Run software program by the keyboard entry.

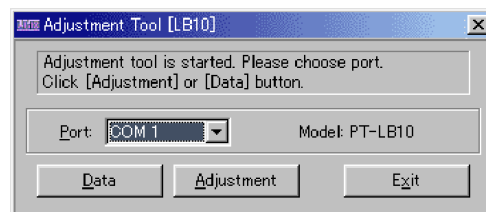
**Note:**

- Use the software program as below.

Adjustment Tool [LB10]

2. The first menu is Port selection menu.
3. Adjust the projector by selecting the necessary item from the menu in each stage.

### 8.6.3. Port Selection Menu



Select the applying item with the list box and click "Data" or "Adjustment".

### 8.6.3.1. Explanation of Buttons

**Port:**

Port name of PC which connects with the projector

**Data:**

Displays the data transmission/reception menu.

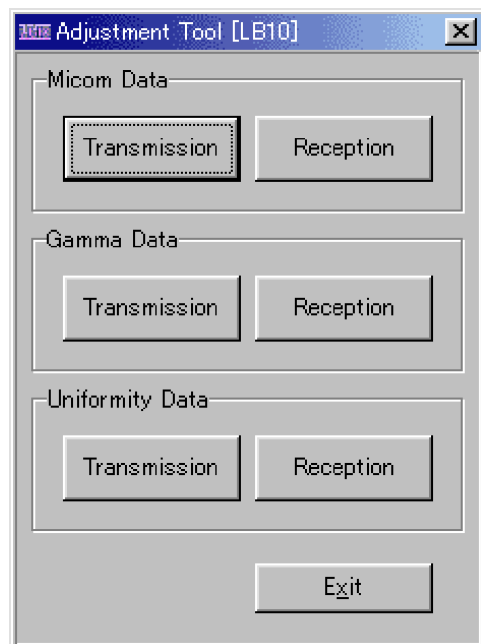
**Adjustment:**

Displays the adjustment menu.

**Exit:**

Exits this application.

### 8.6.4. Data Transmission / Reception Menu



#### 8.6.4.1. Explanation of Buttons

**Micom Data Transmission:**

Reads the microcomputer data from the file and transmits it to the projector.

**Micom Data Reception:**

Receives the microcomputer data from the projector and writes it in the file.

**Gamma Data Transmission:**

Reads the gamma data from the file and transmits it to the projector.

**Gamma Data Reception:**

Receives the gamma data from the projector and writes it in the file.

**Uniformity Data Transmission:**

Reads the color unevenness correction data from the file and transmits it to the projector.

**Uniformity Data Reception:**

Receives the color unevenness correction data from the projector and writes it in the file.

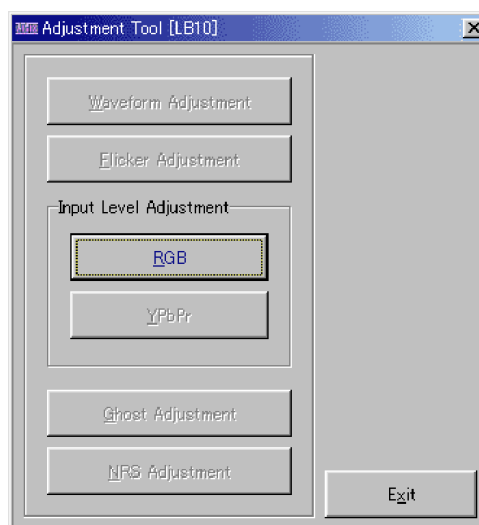
**Exit:**

Exits this application.

#### 8.6.4.2. Receiving and transmitting of the data

Click a target button and specify a file name.

### 8.6.5. Adjustment Menu



#### 8.6.5.1. Explanation of Buttons

**Input Level Adjustment RGB:**

Displays the RGB input level adjustment menu.

**Exit:**

Exits this application.

## 8.7. Flicker Adjustment

According to the procedure of chapter 5 "Flicker Adjustment Mode", minimize the flicker.

## 8.8. Input Level Adjustment

### 8.8.1. Adjustment Menu



#### 8.8.2. Explanation of Buttons

**OK:**

Executes automatic sub contrast and sub brightness adjustments, then closes this dialog.

**Cancel:**

Cancels this menu.

### 8.8.3. Equipment to be used

PC, RGB Signal Generator, Software for Adjustment

### 8.8.4. Adjustment Procedure

1. Display the input level adjustment [RGB] menu.
2. Input a window pattern signal to RGB IN connector.

**Note:**

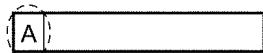
- Use approx. 15 % window pattern as follows.  
Black background (screen width) : White window  
width = 2 : 1  
Black background (screen height) : White window  
height = 3 : 1
- PT-LB10NTU/E, LB10U/E, LB10VU/E must use the  
window pattern of XGA (1 024 × 768).
- PT-LB10SU/E must use the window pattern of S-  
VGA (800 × 600).

3. Click the OK button.

## 9 Troubleshooting

The letters in the left of the inspection items indicate the P.C.Boards or Modules related to their respective descriptions.

Note:

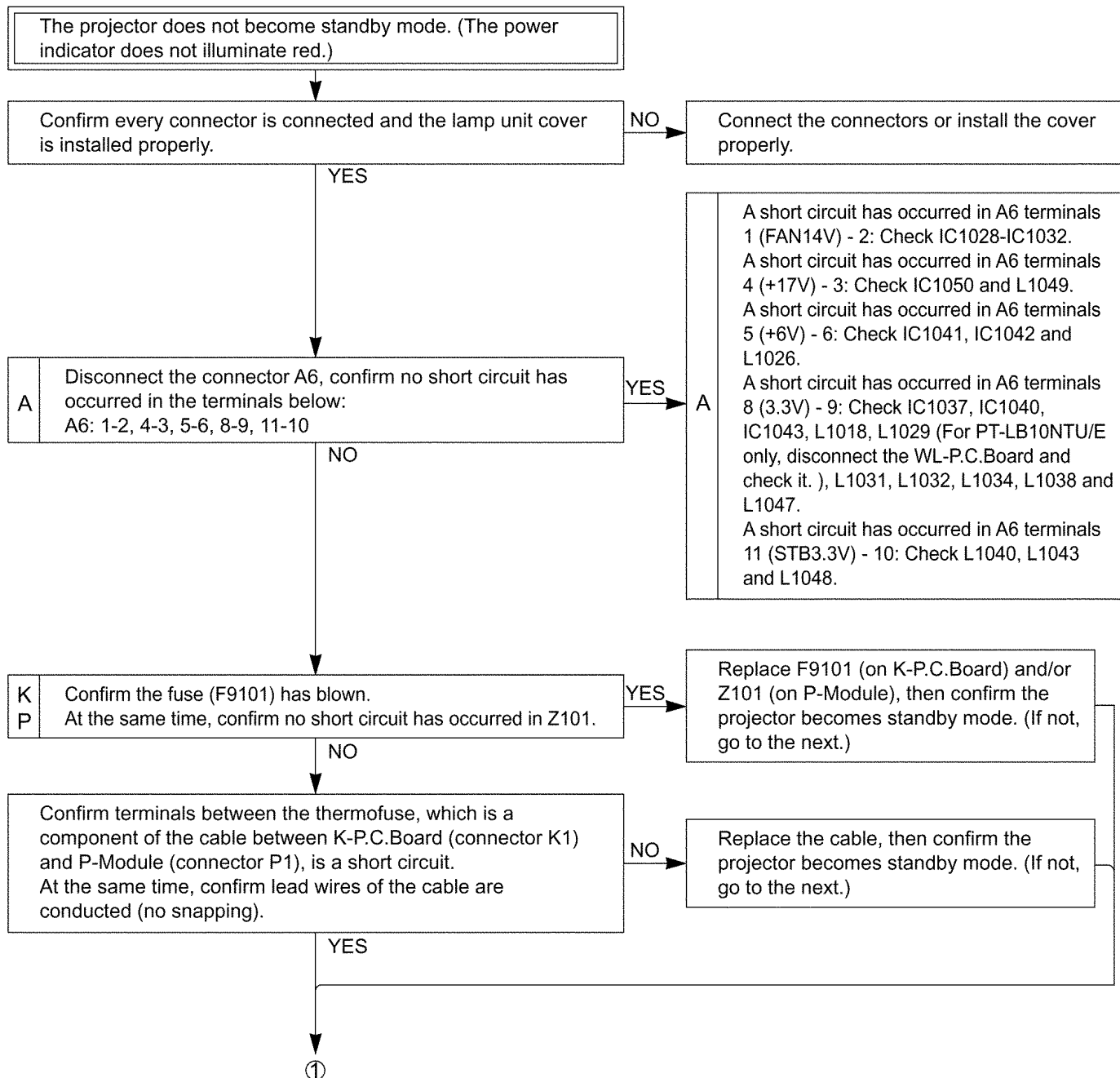


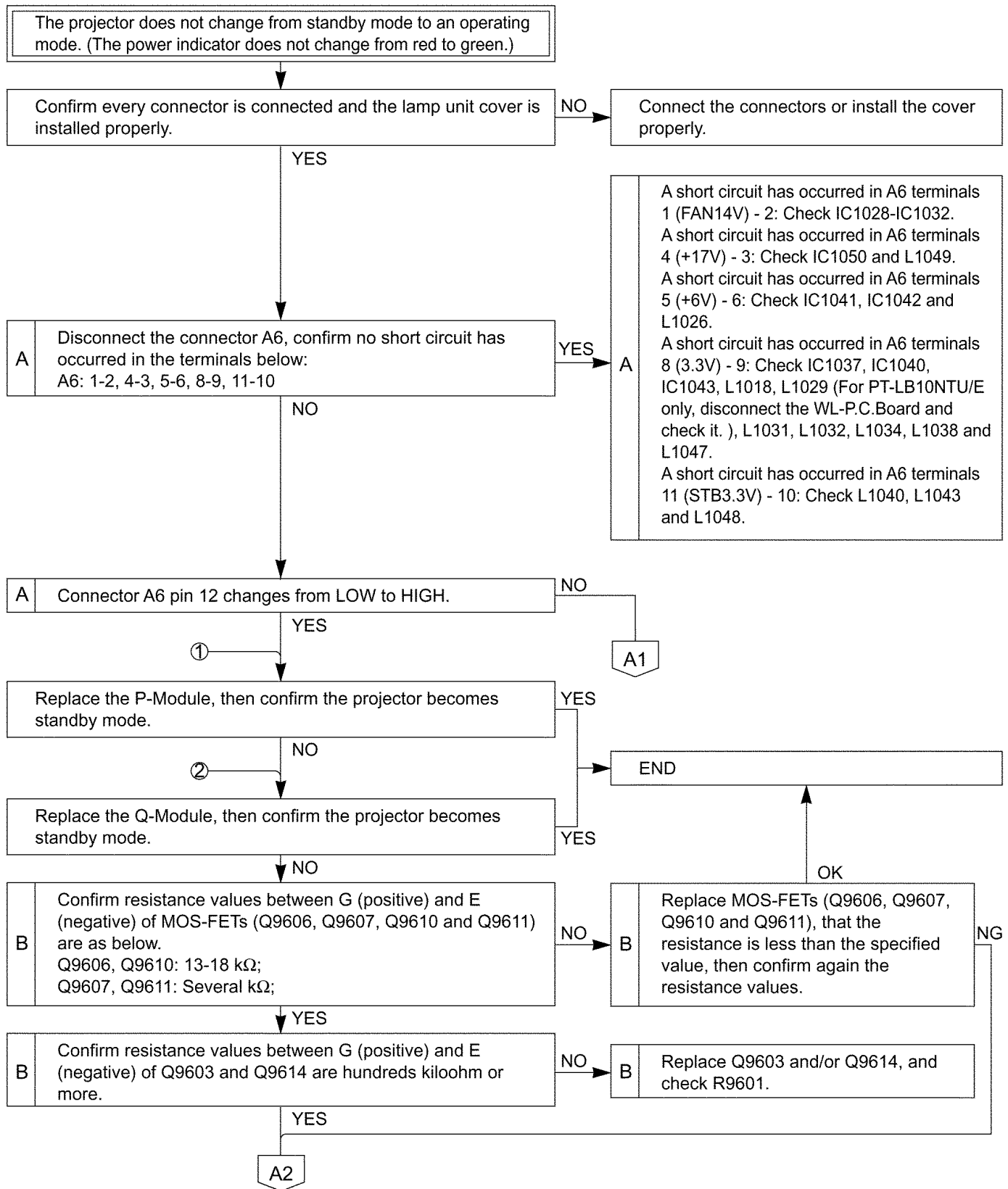
The letter of the alphabet indicates the P.C.Board or Module name.

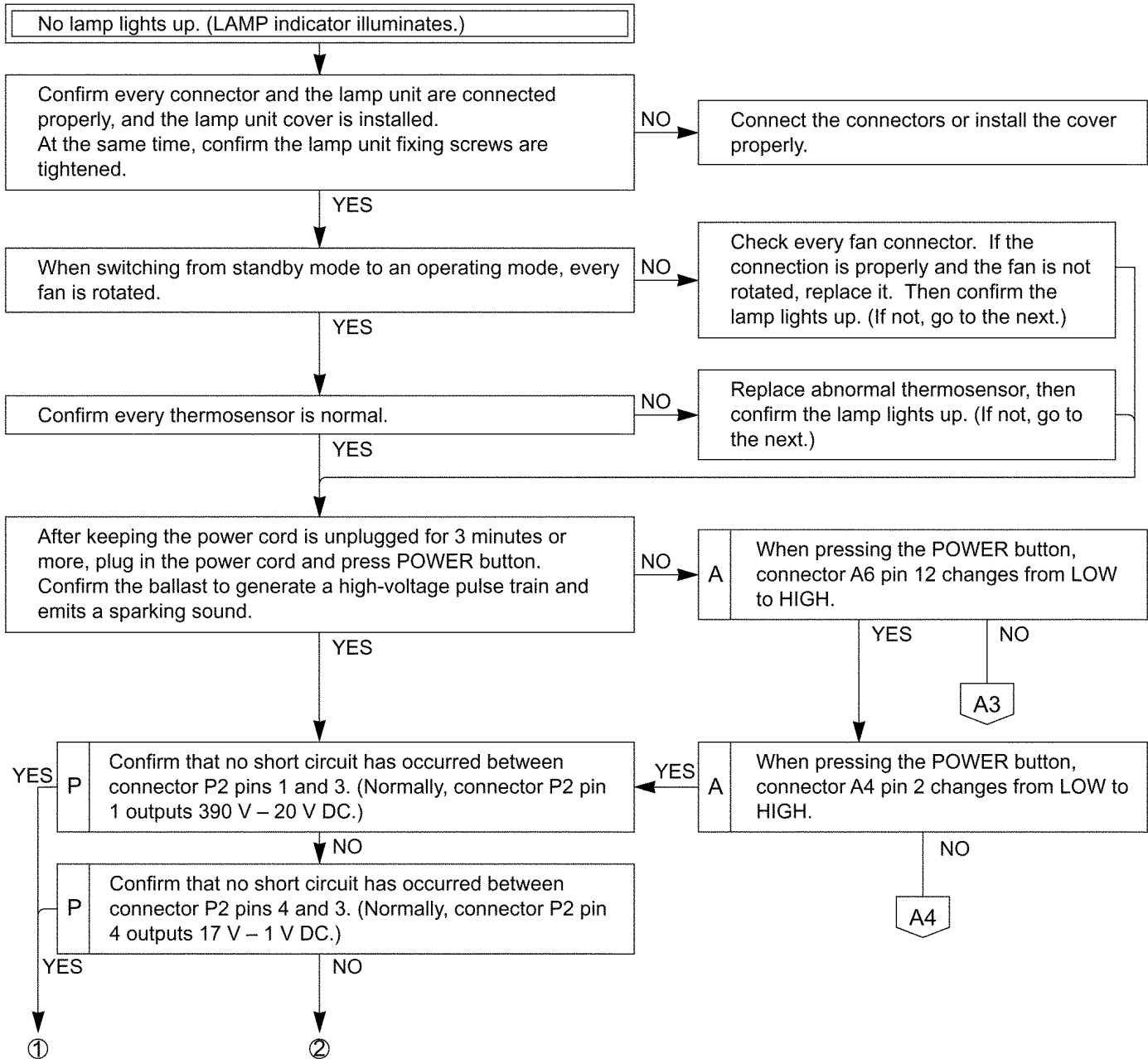
(Example) A: A-P.C.Board, B: B-Module

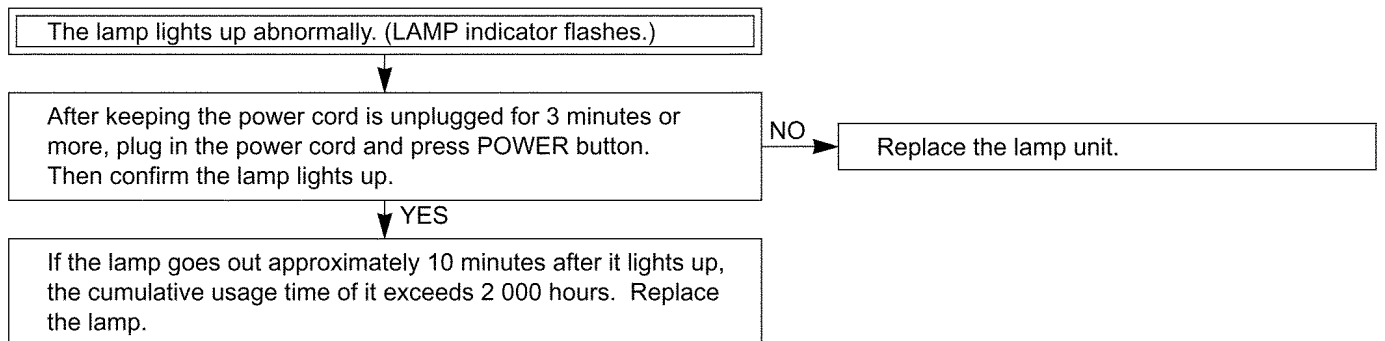
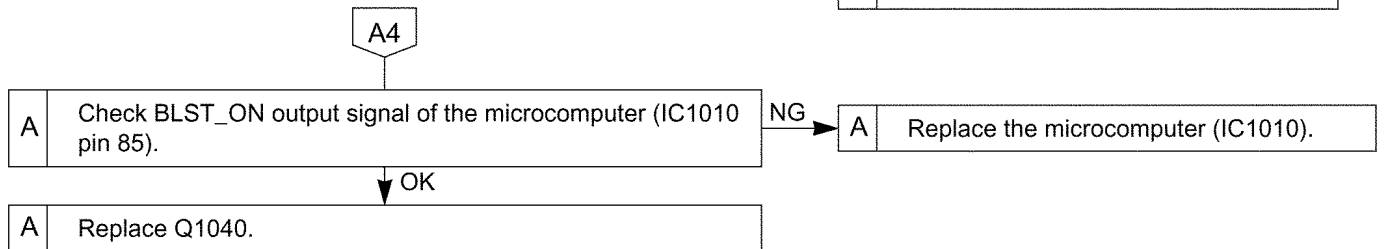
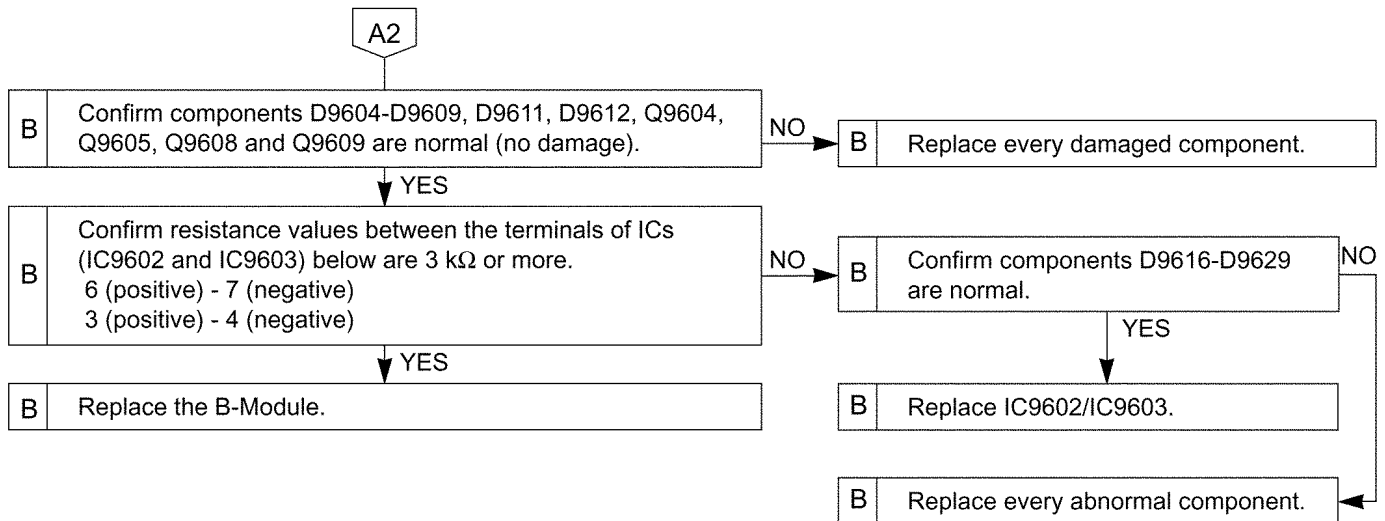
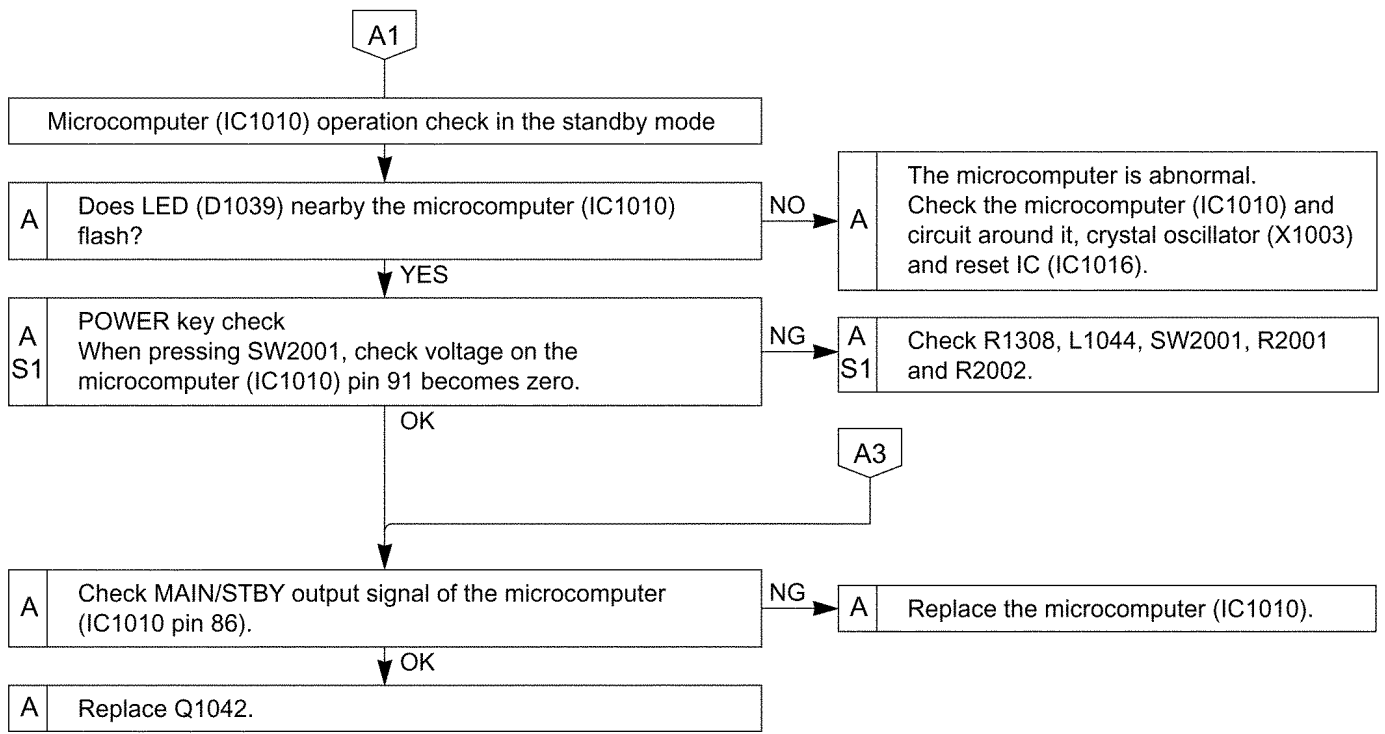
If replacing A-P.C.Board (assembly), read the ROM data from the old P.C.Board and write it in the new one according to the section 8.6. "Software for Adjustment". At this time, if the readout from the old P.C.Board does not succeed, remove IC1011 and IC1017 from the old P.C.Board and install them on the new one.

If replacing A-P.C.Board (assembly), adjust the RGB Input Level according to the chapter 8.8. "Input Level Adjustment".

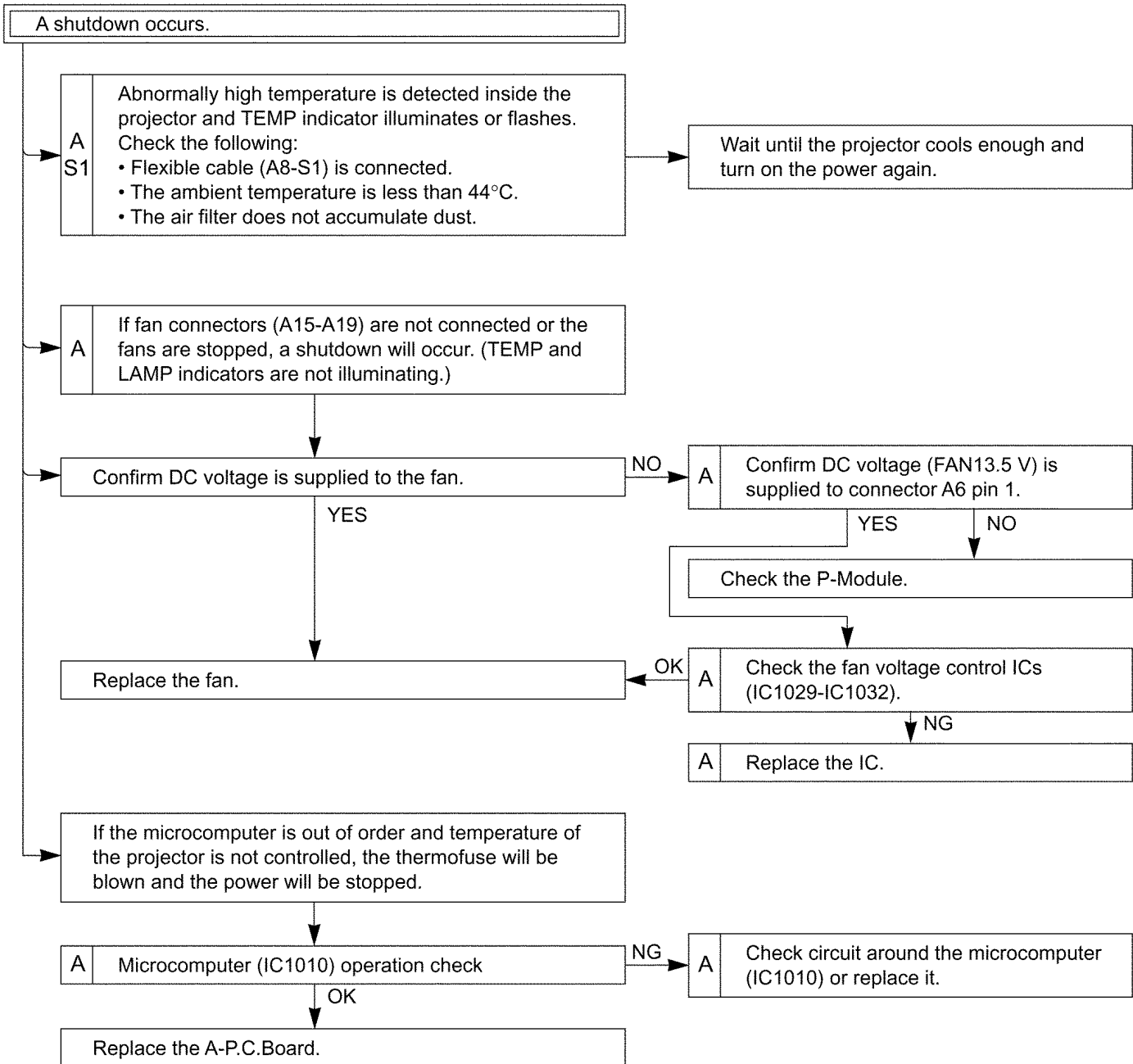


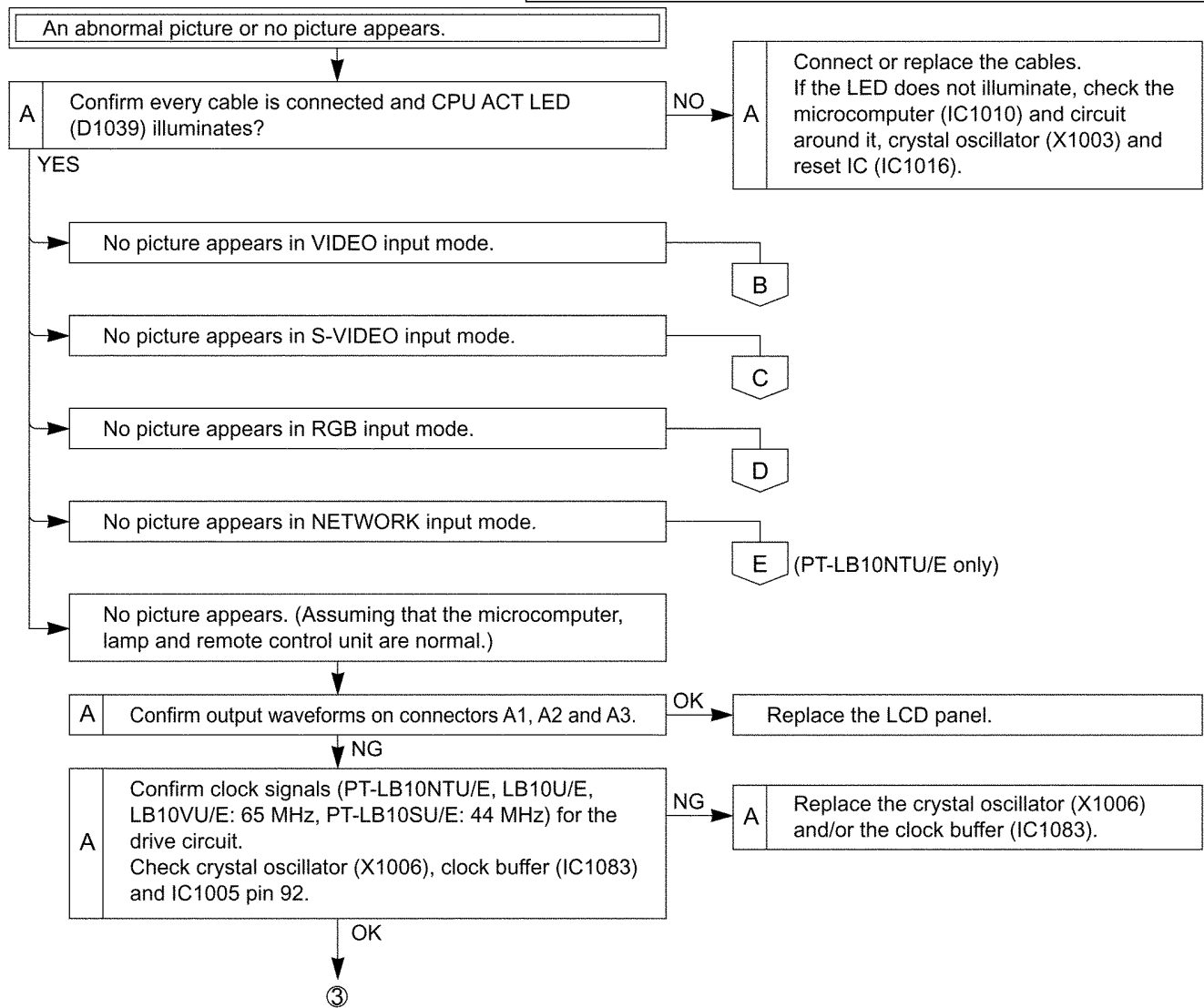


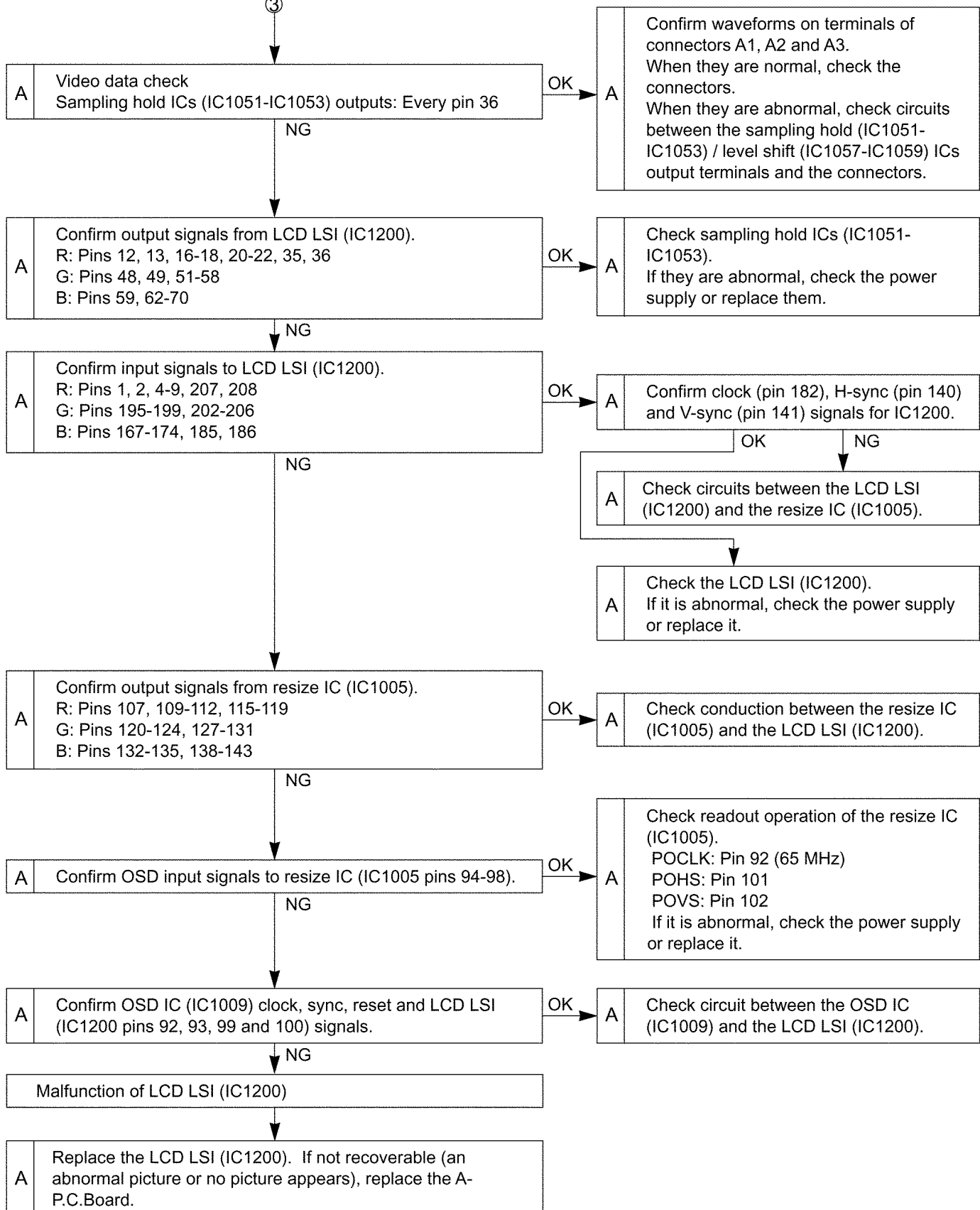


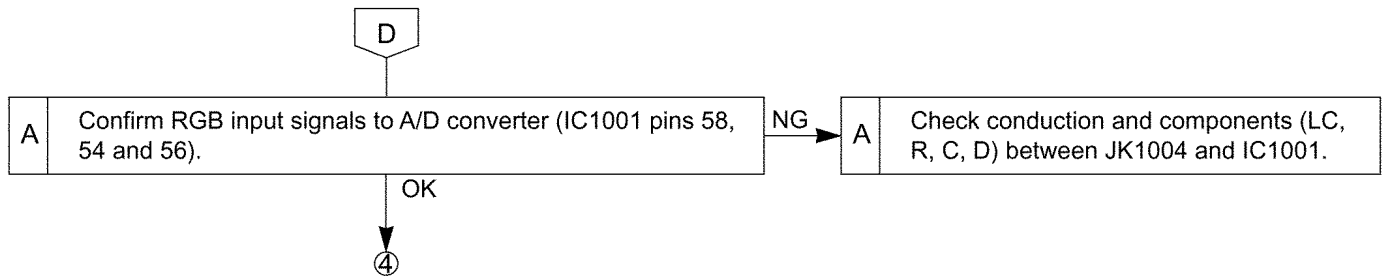
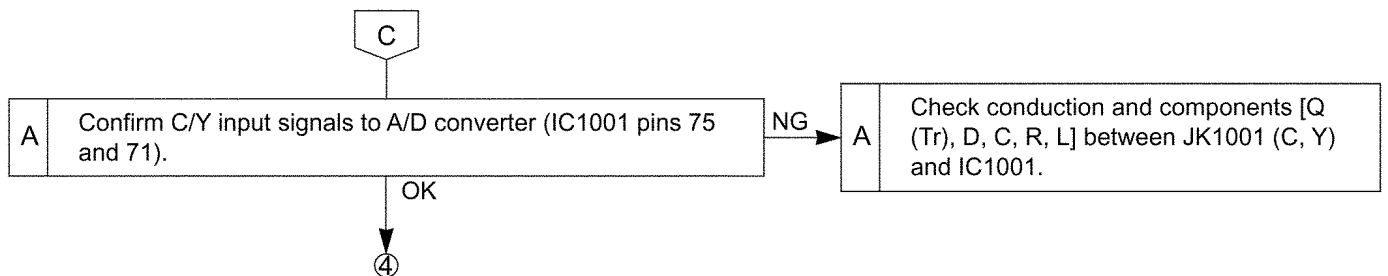
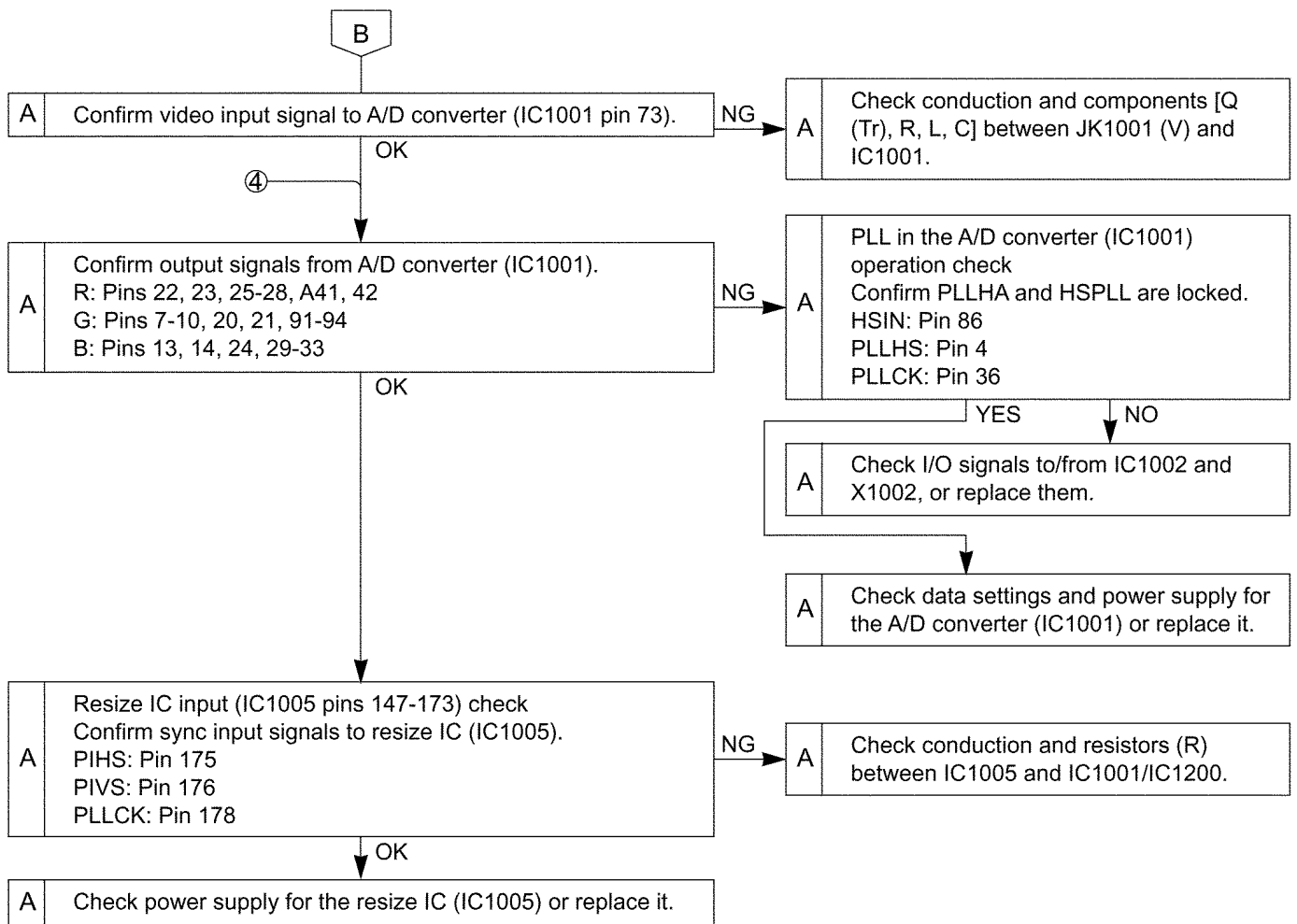


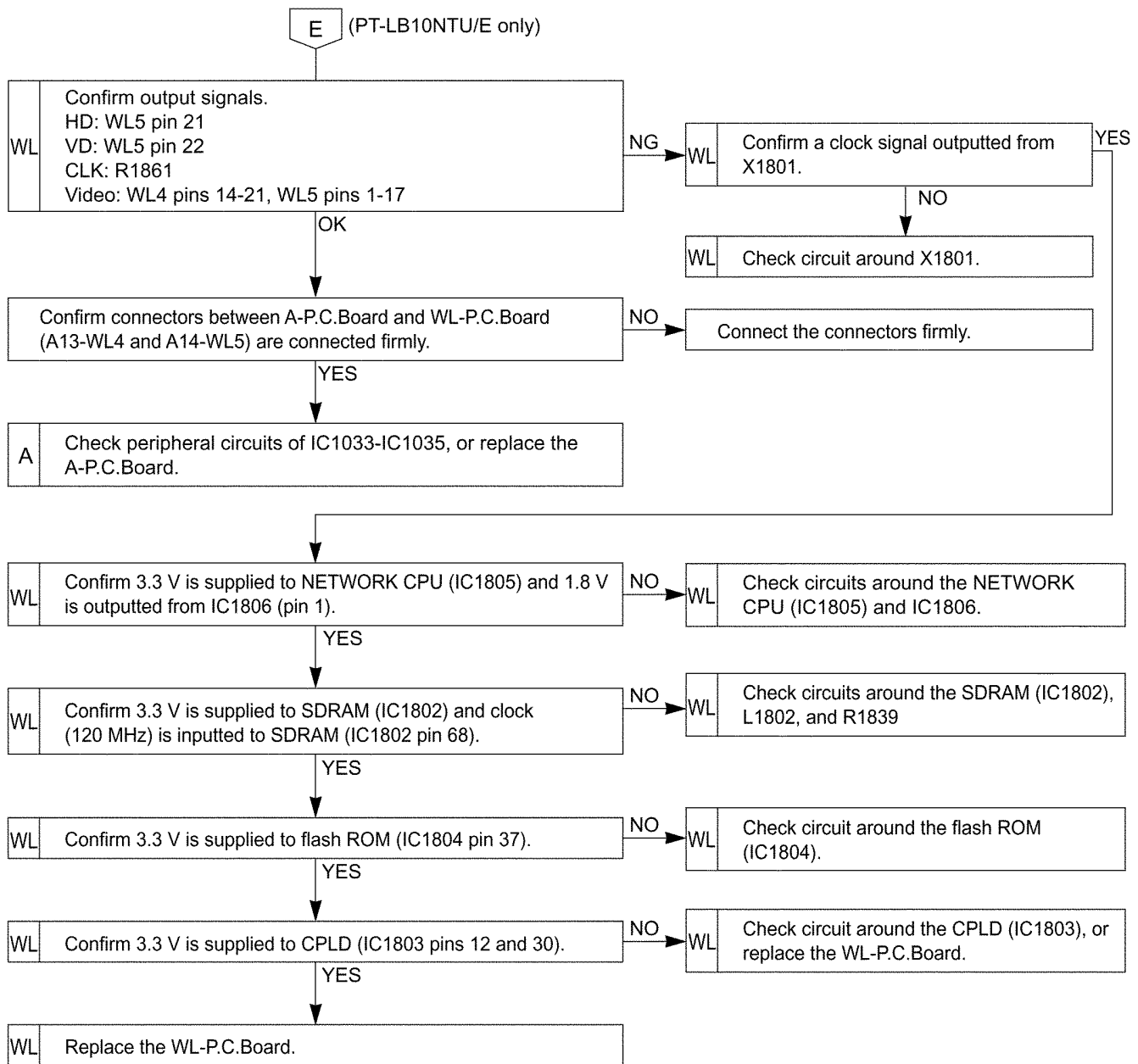


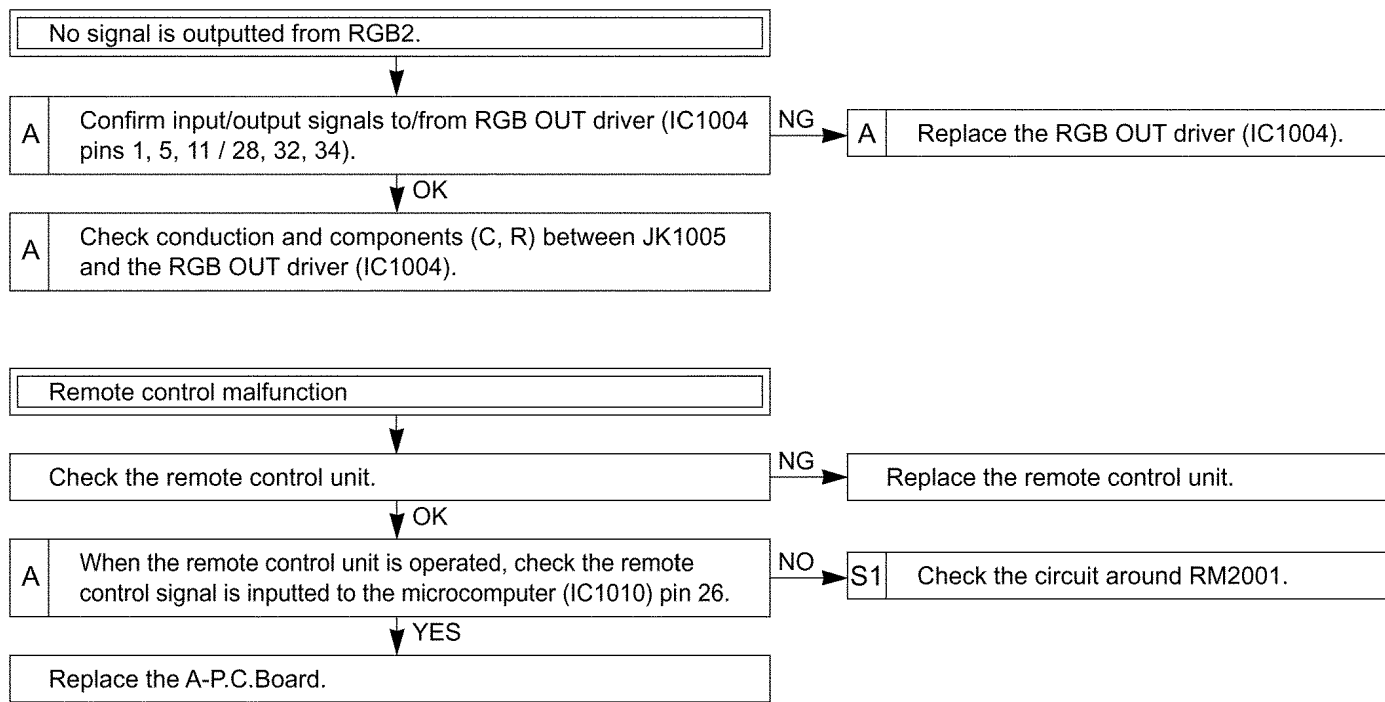


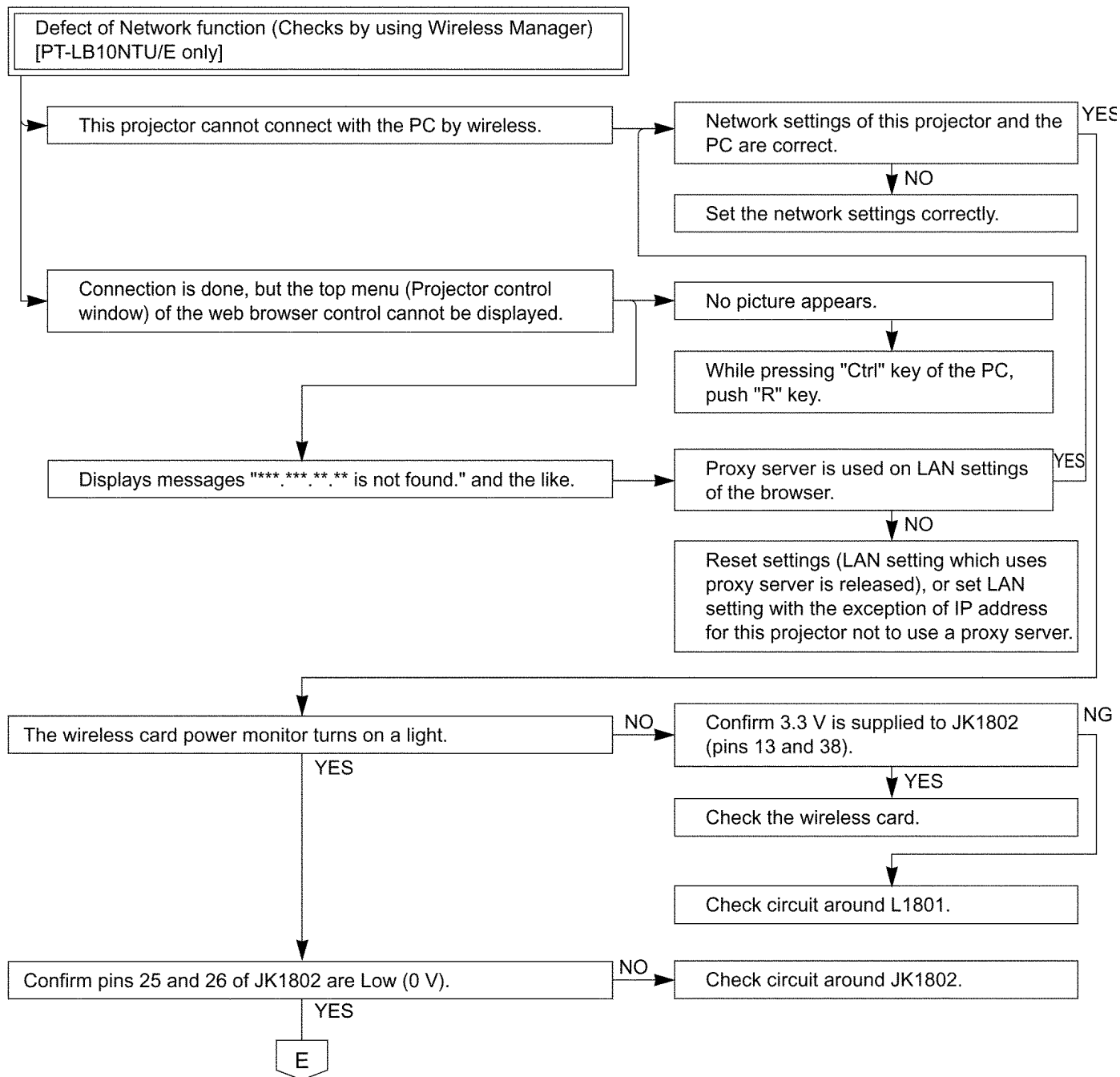








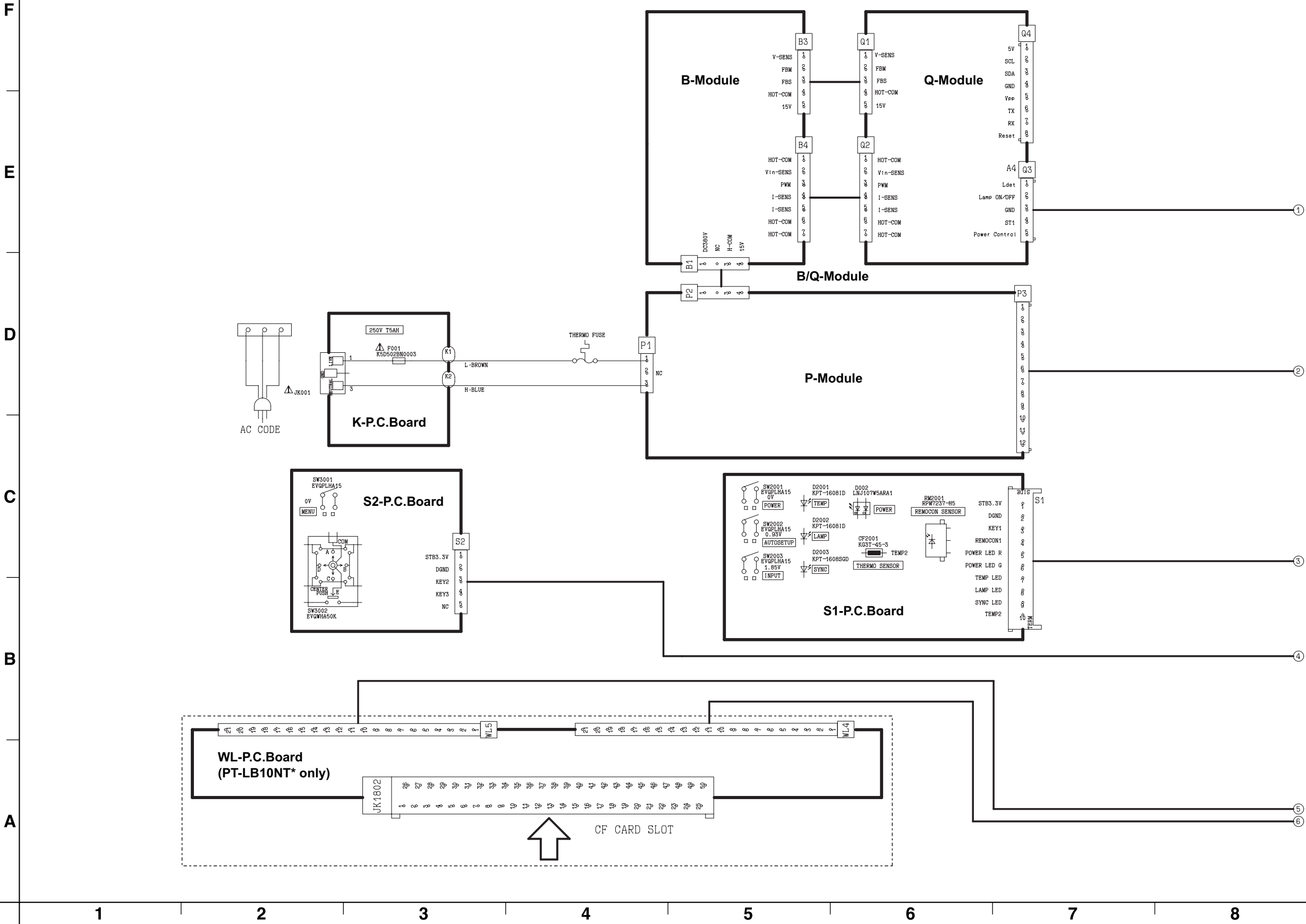




# 10 Interconnection Block Diagram

## 10.1. Interconnection Block Diagram (1 / 2)

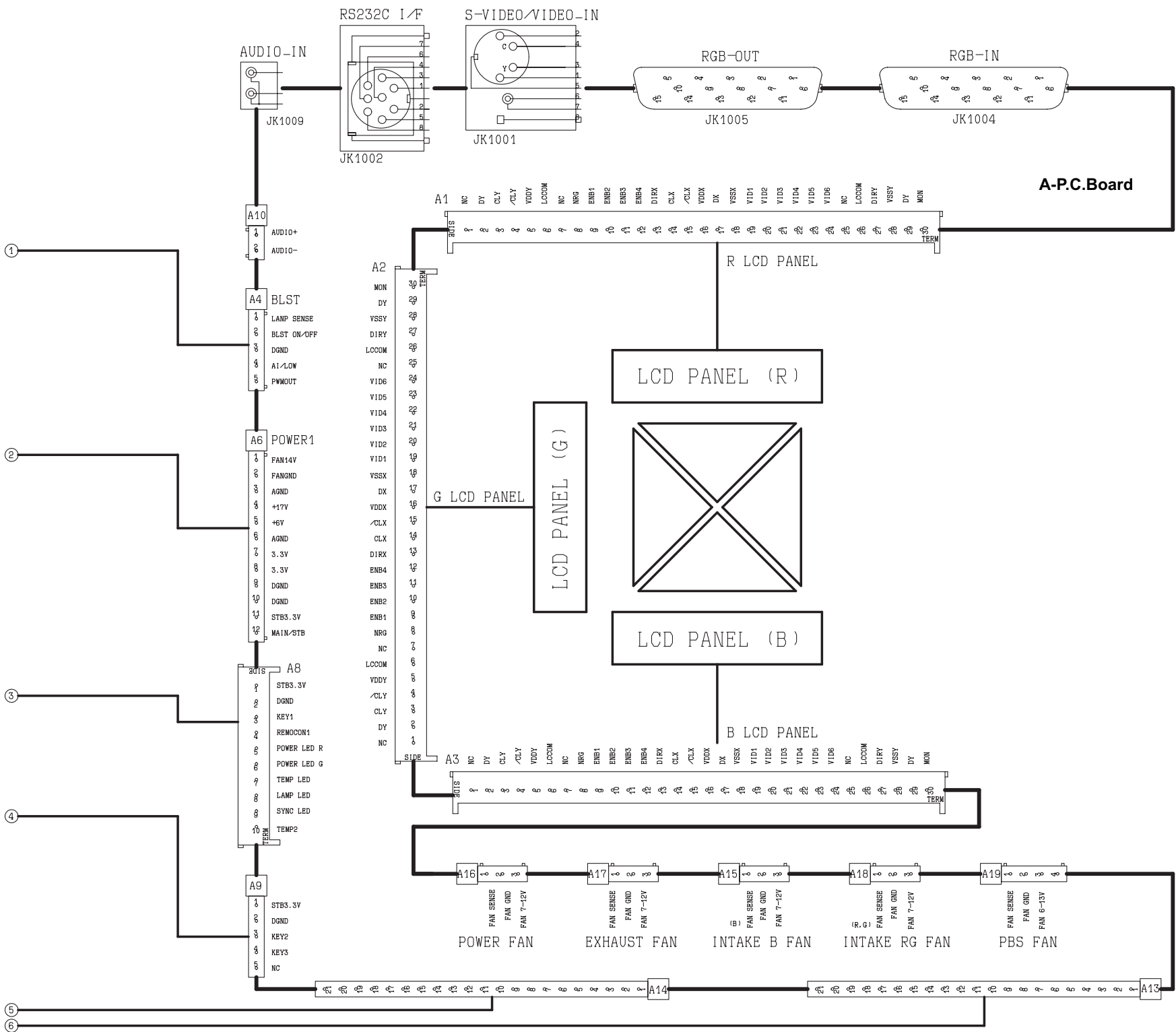
Interconnection Block Diagram (1/2)





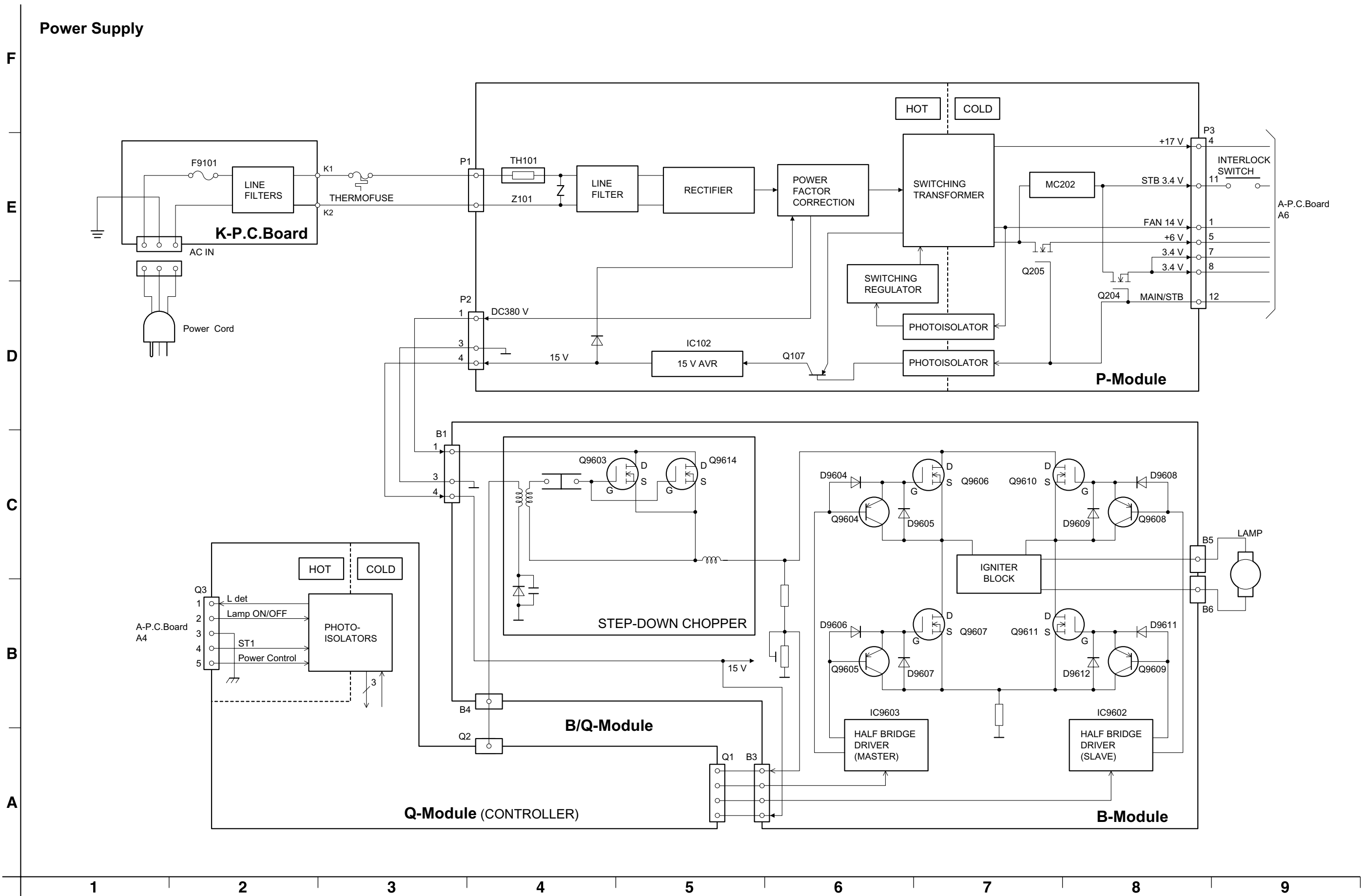
10.2. Interconnection Block Diagram (2 / 2)

Interconnection Block Diagram (2/2)

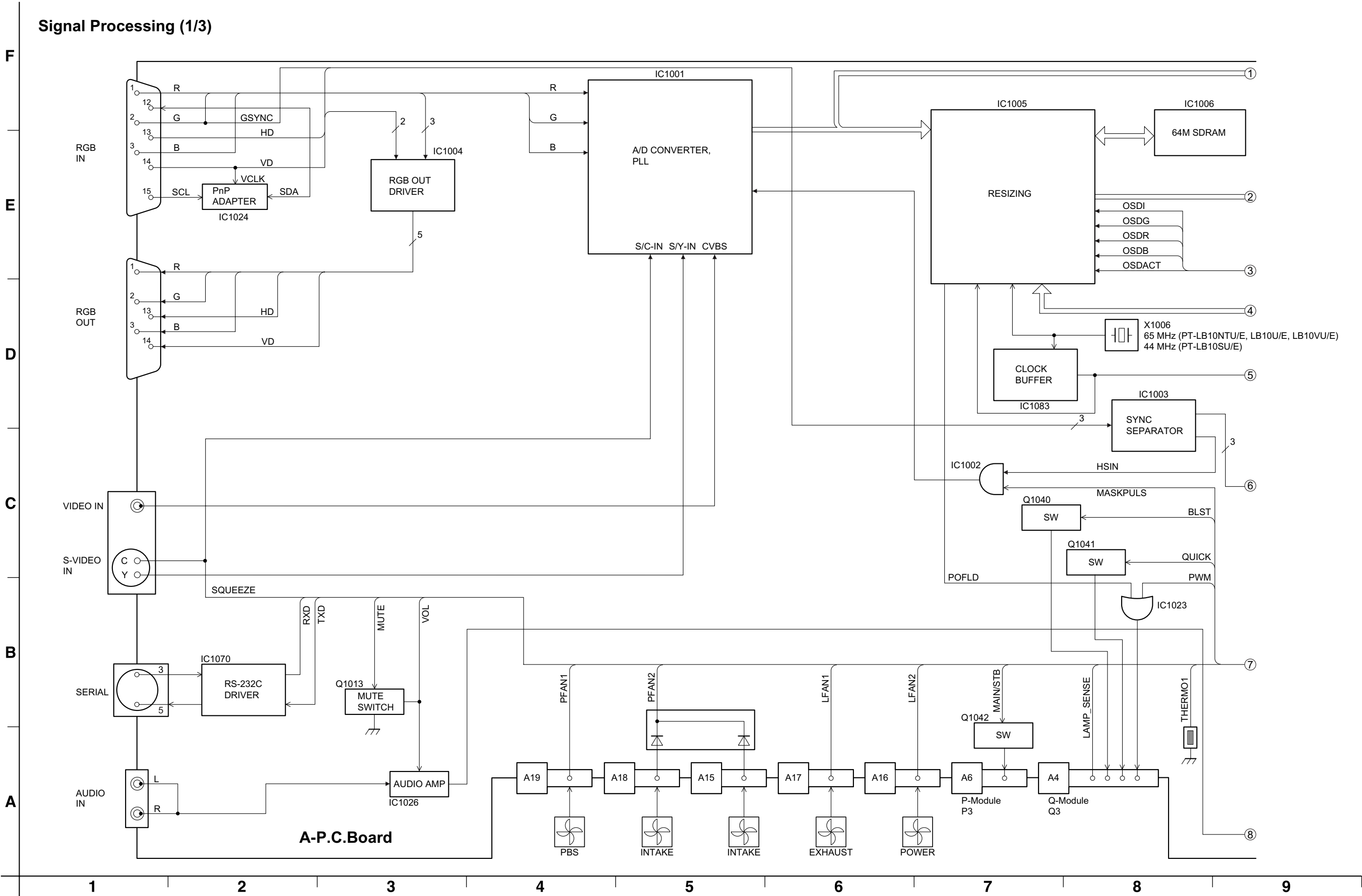


# 11 Block Diagram

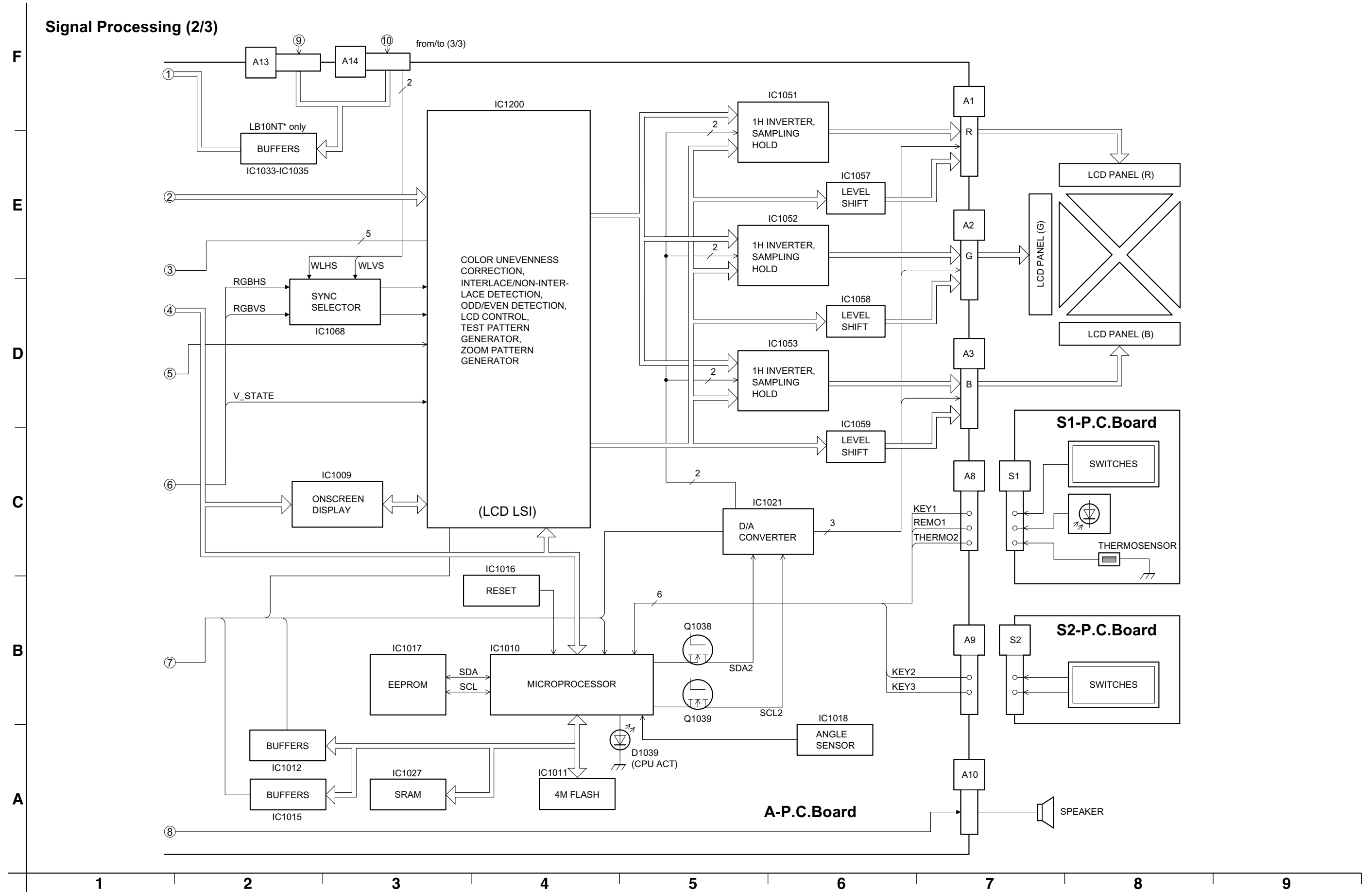
## 11.1. Power Supply



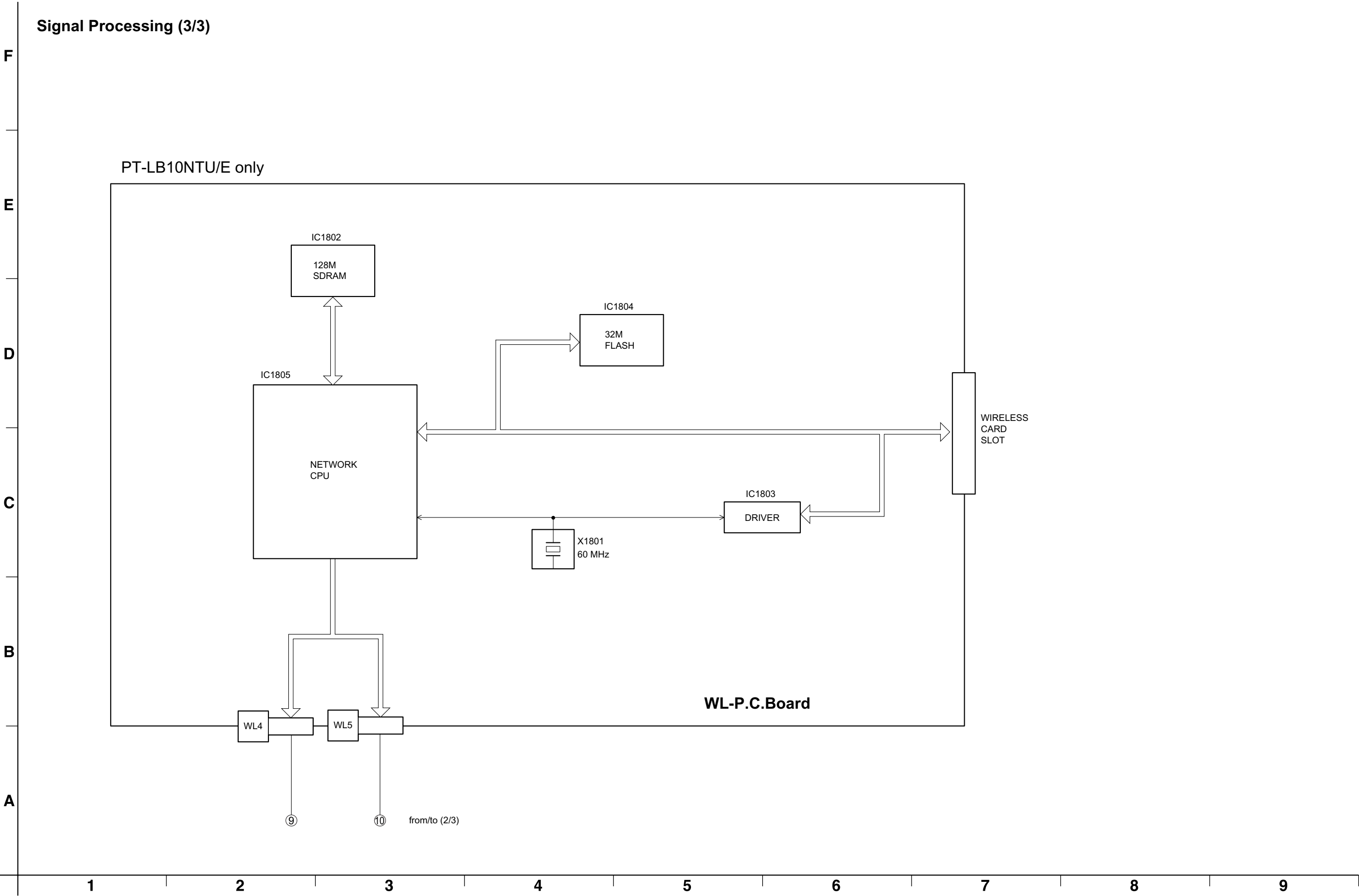
11.2. Signal Processing (1 / 3)



# 11.3. Signal Processing (2 / 3)



11.4. Signal Processing (3 / 3)




# 12 Schematic Diagram

## Schematic Diagram for Model PT-LB10NTU/LB10U/LB10VU/LB10SU

**IMPORTANT SAFETY NOTICE**  
THE SHADED AREA ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING, IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS OF THE SCHEMATIC.


## Schematic Diagram for Model PT-LB10NTE/LB10E/LB10VE/LB10SE

**Important Safety Notice**  
Components identified by the international symbol  have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified ones.









Notes:

1. **Resistor**

All the resistors are carbon 1/4W resistors, unless marked as follows: The unit of resistance is an OHM [ $\Omega$ ] (K=1 000 M=1 000 000).

-  : Nonflammable
-  : Metal Oxide
-  : Solid
-  : Metal Film
-  : Wire Wound
-  : Fuse

2. **Capacitor**

-  : Temperature Compensation
-  : Electrolytic
-  : Polyester
-  : Bipolar
-  : Metalized Polyester
-  : Dipped Tantalum
-  : Polypropylene
-  : Z-Type

3. **Coil**

The unit of inductance is a H, unless otherwise noted.





4. **Test Point**

-  : Test Point

5. **Voltage Measurement**

The voltage is measured by an electronic voltmeter receiving the colorbar signal when all the customer's controls are set to the standard condition.

6. **Color code for the links between diagrams and circuit boards**

From/To		To/From	Color code
Block diagram		Schematic diagram	Magenta
Schematic diagram		Schematic diagram	Green
Schematic diagram		Circuit boards	Yellow
Schematic diagram		Waveforms	Cyan (Light blue)

7. **HOT and COLD indications**

The power circuit board contains a circuit area using a separate power supply to isolate the ground connection. The circuit is defined by HOT and COLD indications in the schematic diagram. Take the precautions below:

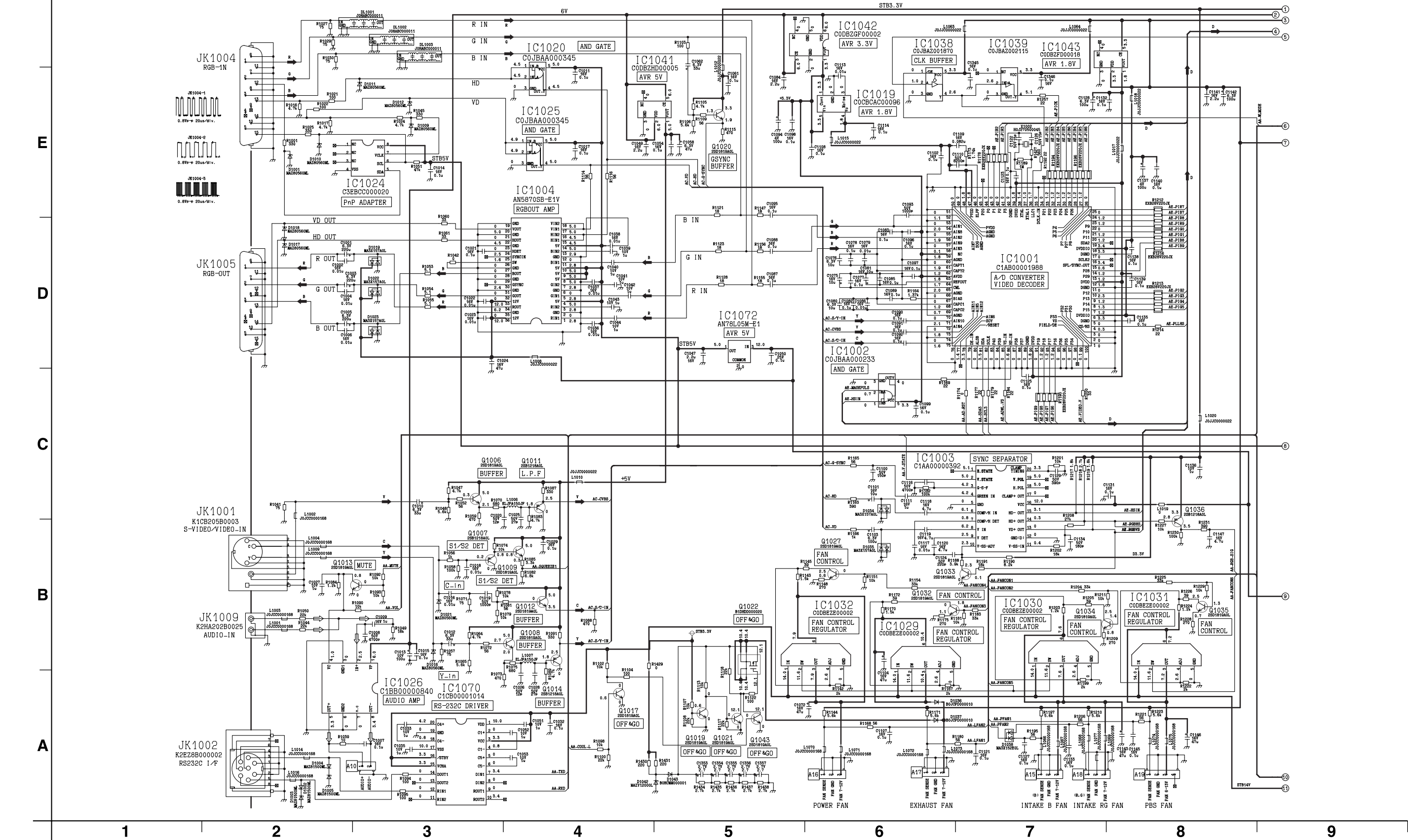
8. **This schematic diagram is the latest at the time of printing and the subject to change without notice.**

**Precautions:**

1. NEVER touch the HOT part or the HOT and COLD parts at the same time, or you may get an electric shock.
2. NEVER short-circuit the HOT and COLD circuits, or the fuse may blow and the parts may break.
3. NEVER connect an instrument such oscilloscope to the HOT and COLD circuit simultaneously, or the fuse may blow.Connect the ground of instruments to the ground of the circuit being measured.
4. MAKE SURE to unplug the power cord from the power outlet before removing the chassis.

12.1. A-P.C.Board (1 / 4)

A-P.C.Board (1/4) TXANP01PVMZ (LB10NT\*) TXANP01PVNZ (LB10\*)  
TXANP01PVPZ (LB10V\*) TXANP01PXAZ (LB10S\*)



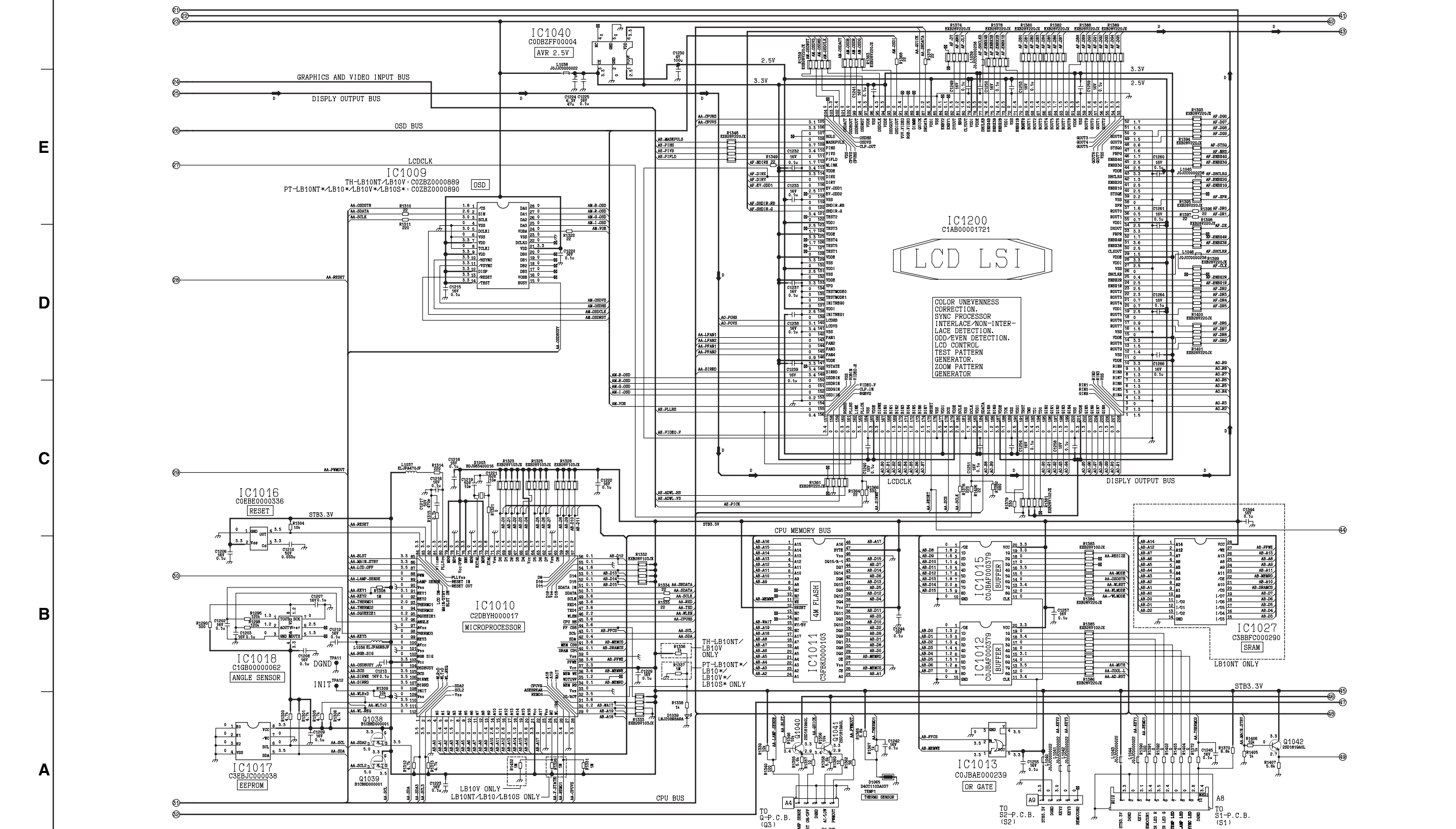
**TXANP01PVNZ (LB10\*)**  
**TXANP01PXAZ (LB10S\*)**





12.3. A-P.C.Board (3 / 4)

A-P.C.Board (3/4) TXANP01PVMZ (LB10NT\*) TXANP01PVNZ (LB10\*)  
TXANP01PVPZ (LB10V\*) TXANP01PXAZ (LB10S\*)



12.4. A-P.C.Board (4 / 4)

F

E

D

C

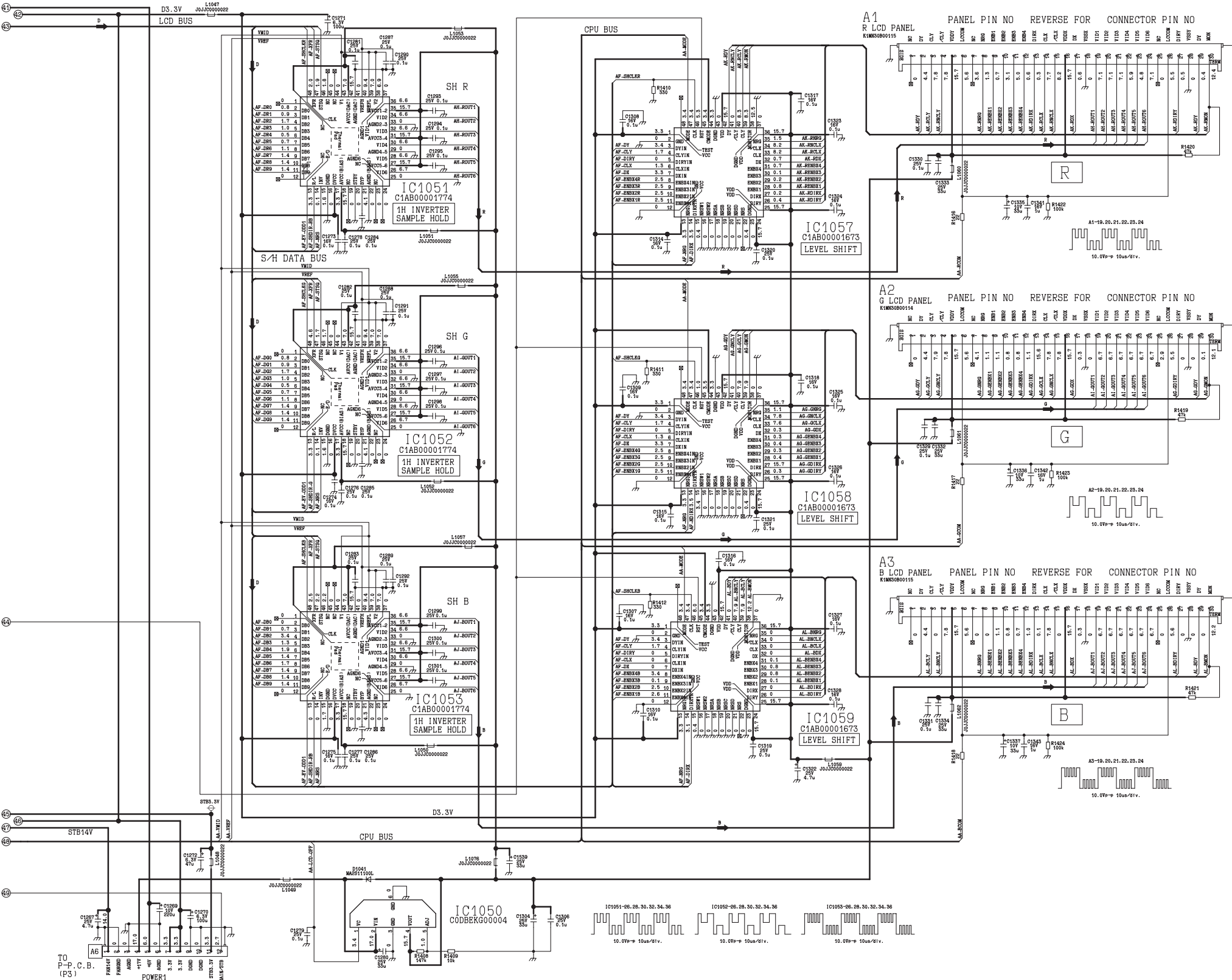
B

A

A-P.C.Board (4/4)

TXANP01PVMZ (LB10NT\*)  
TXANP01PVPZ (LB10V\*)

TXANP01PVNZ (LB10\*)  
TXANP01PXAZ (LB10S\*)



1

2

3

4

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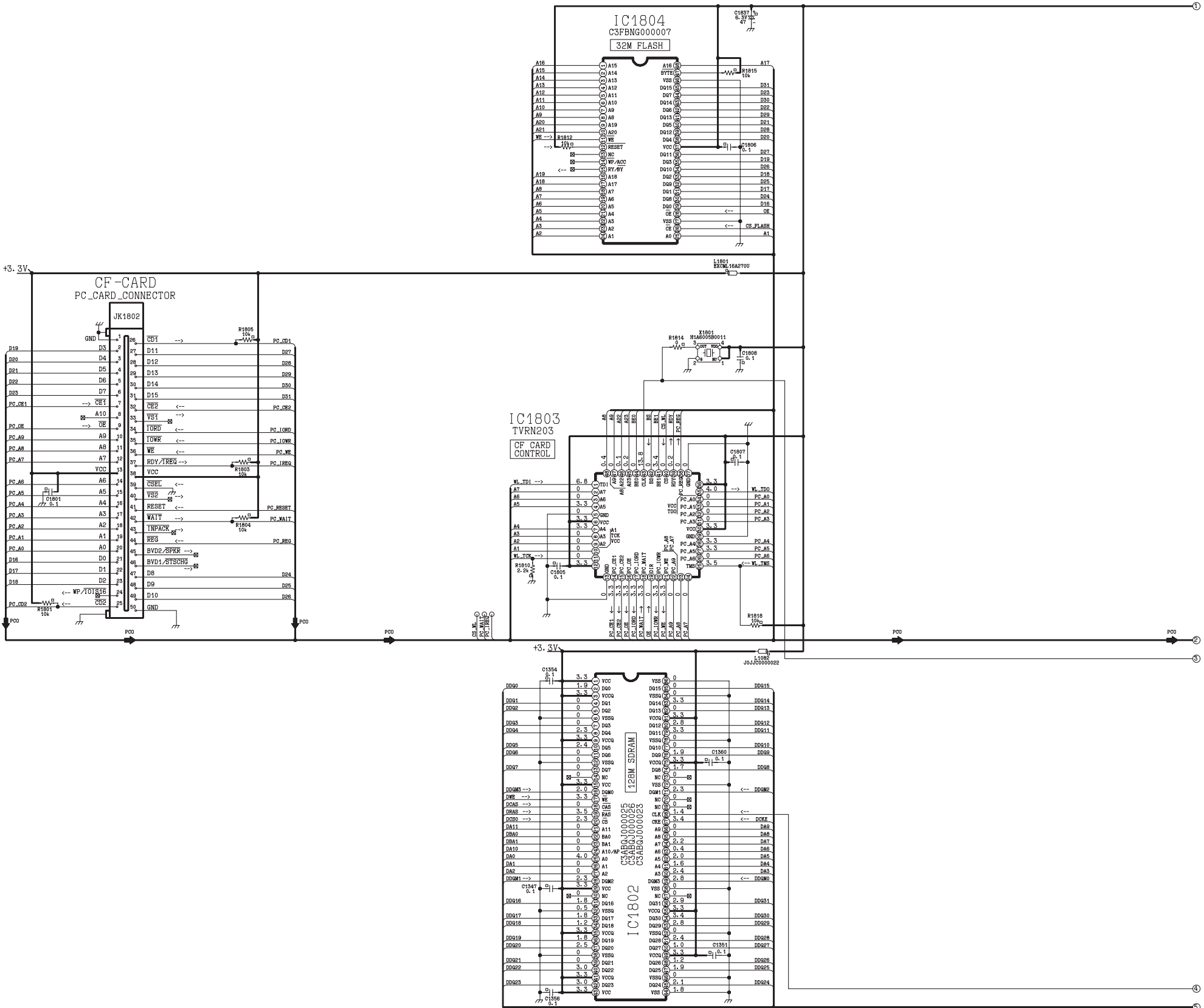
7

8

9

12.5. WL-P.C.Board (1 / 2)

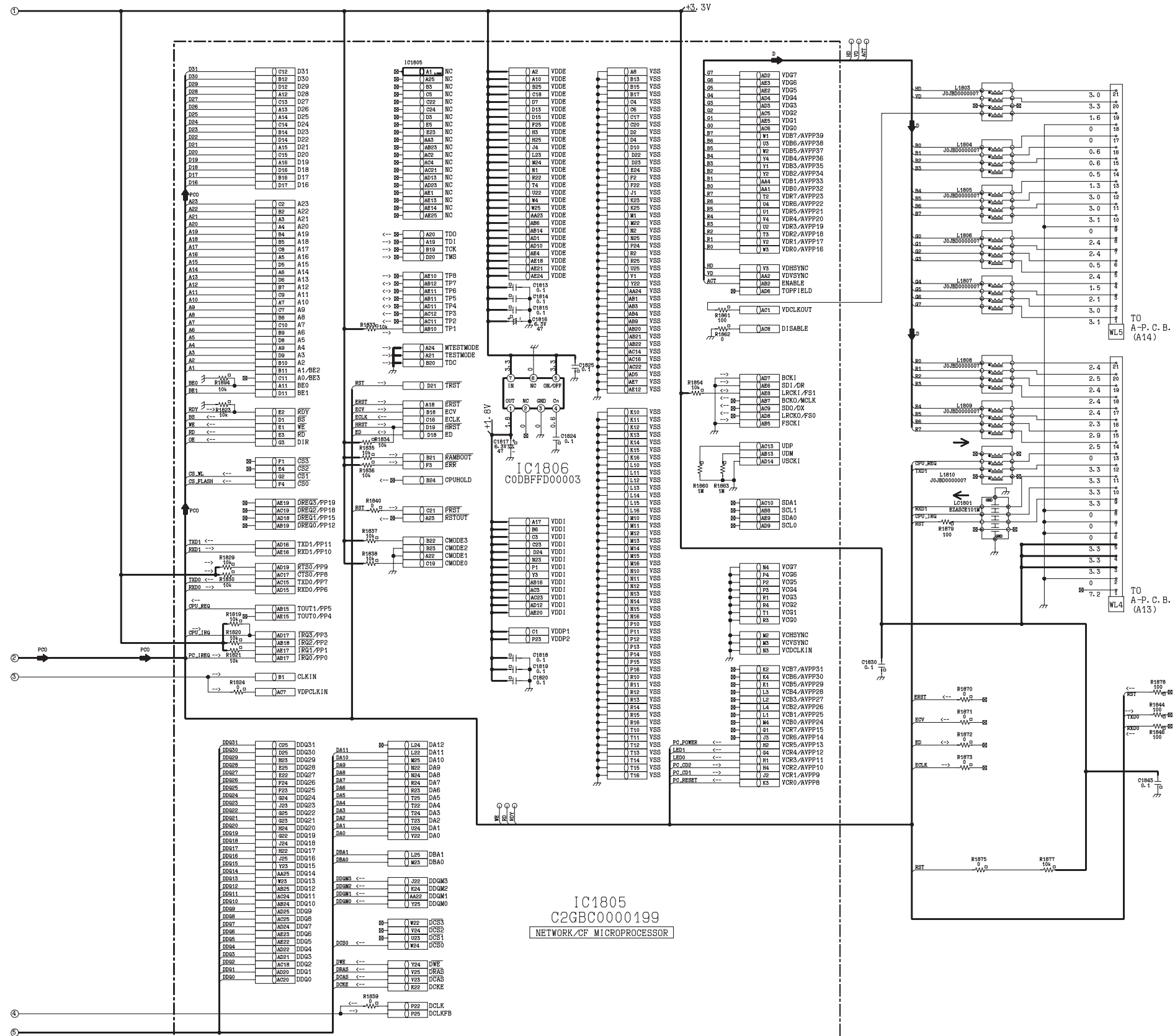
WL-P.C.Board TNPA3143 (1/2) (PT-LB10NT\*)



## 12.6. WL-P.C.Board (2 / 2)

WL-P.C.Board

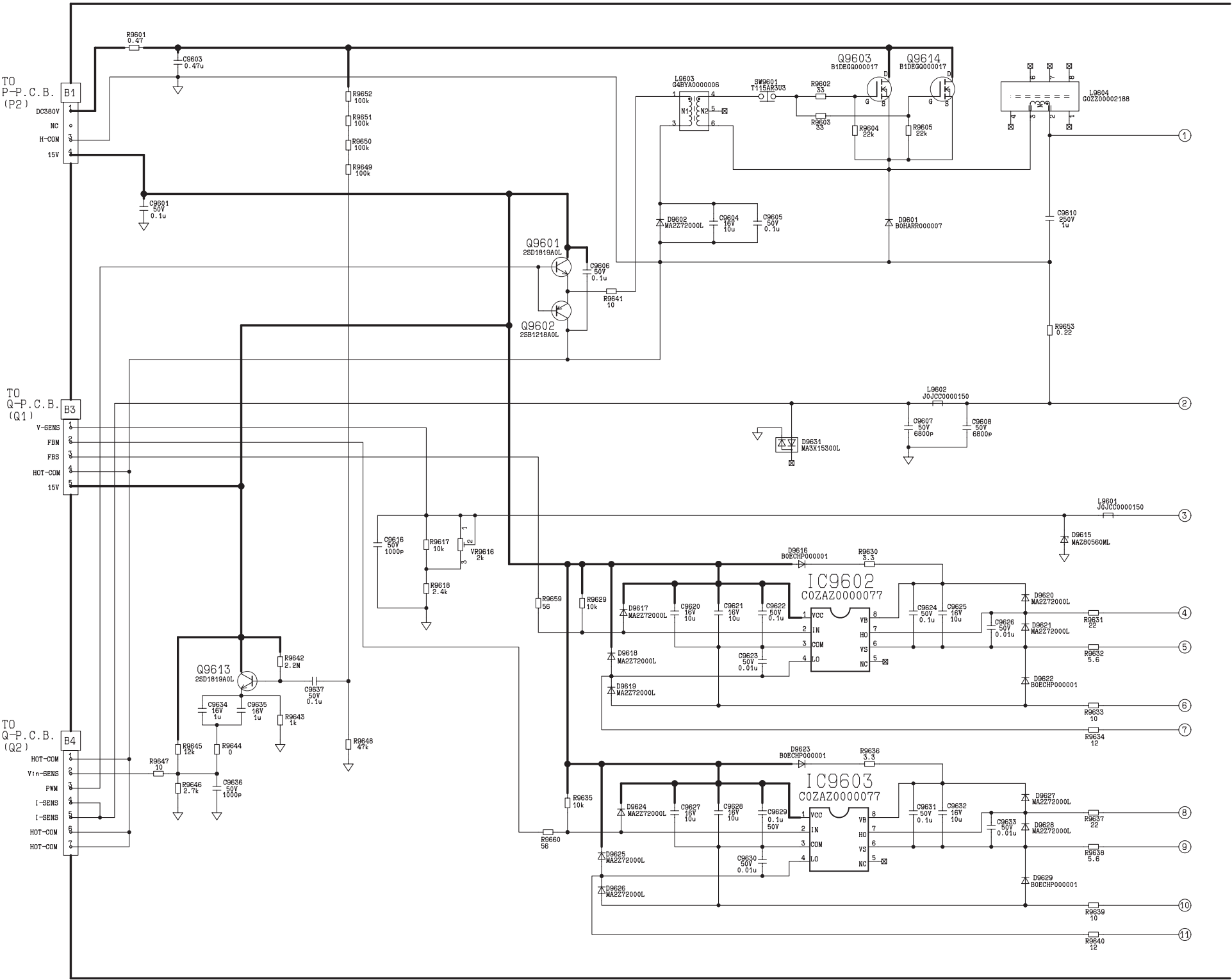
TNPA3143 (2/2) (PT-LB10NT\*)



12.7. B-Module (1 / 2)

B-Module TXANP05VJW5 (1/2) Module Replacement

Only supplied components IC9602-03, Q9603-11, Q9614, D9601, D9604-09, D9611-12, D9616-29, R9601, R9630-34, R9636-40, R9653, C9603, C9610, C9617-19, T9604, SW9601, S9602, TXJ/L2VJW5

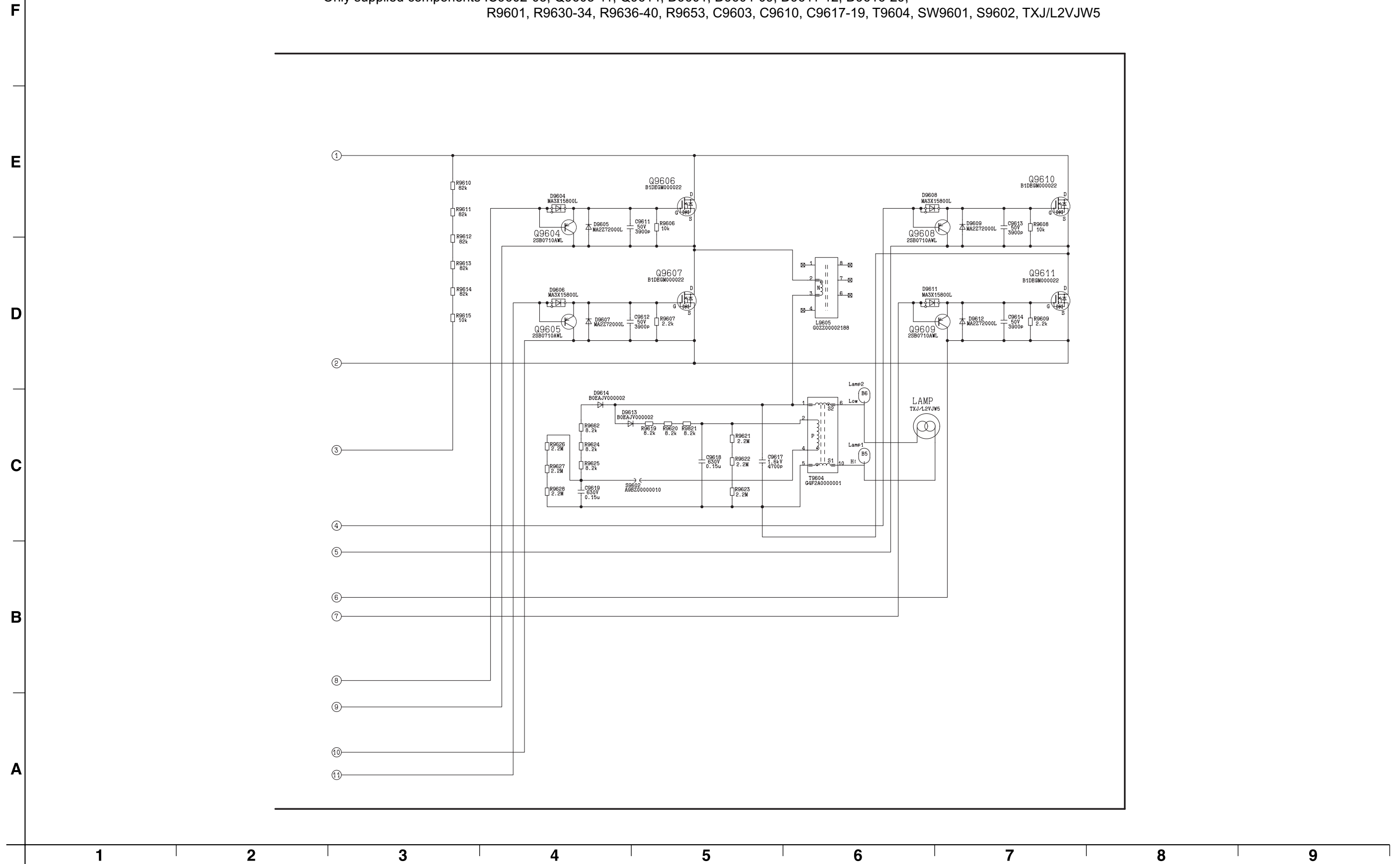




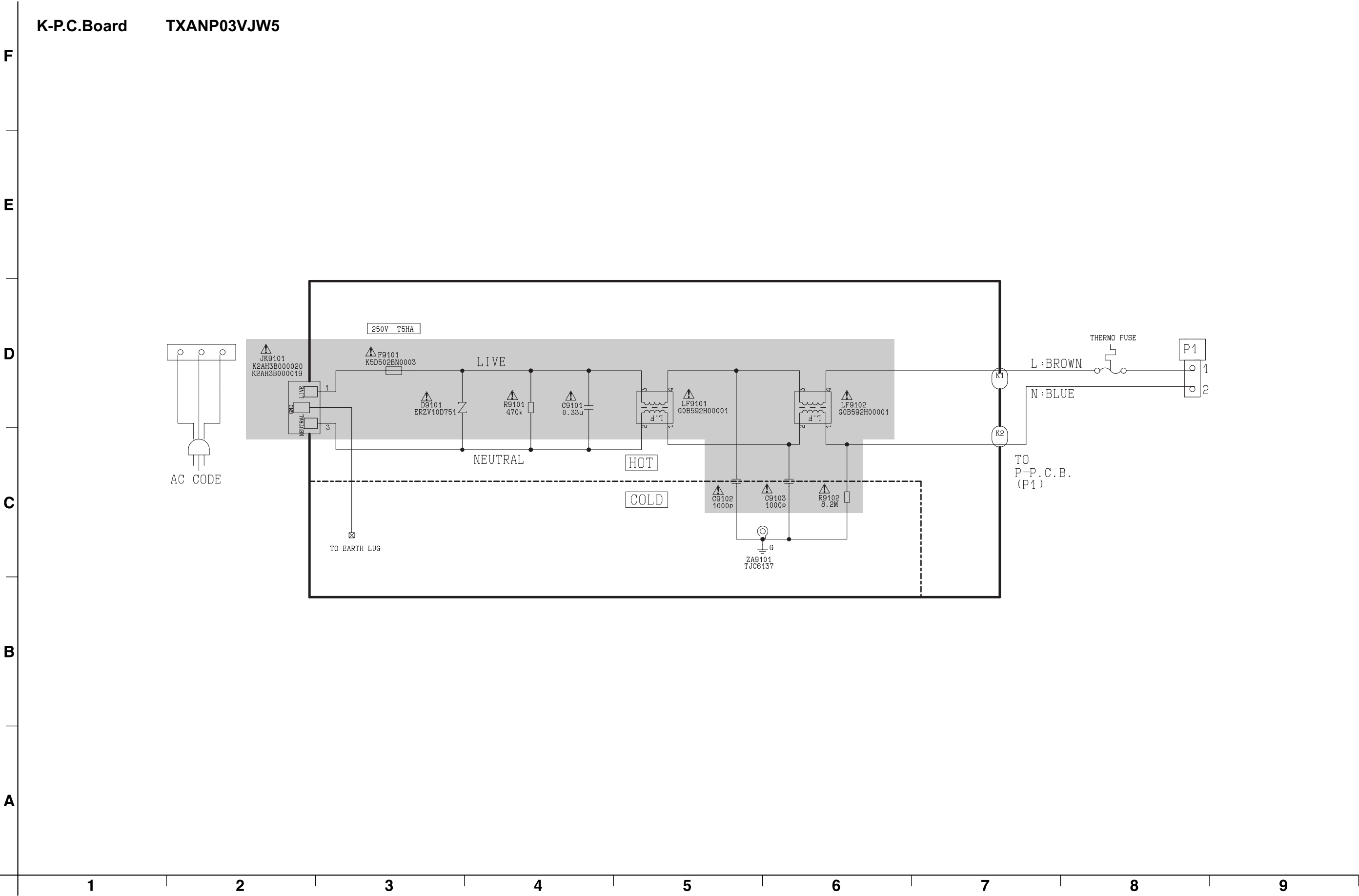
## 12.8. B-Module (2 / 2)

## B-Module TXANP05VJW5 (2/2) Module Replacement

Only supplied components IC9602-03, Q9603-11, Q9614, D9601, D9604-09, D9611-12, D9616-29,  
R9601, R9630-34, R9636-40, R9653, C9603, C9610, C9617-19, T9604, SW9601, S9602, TXJ/L2VJW5

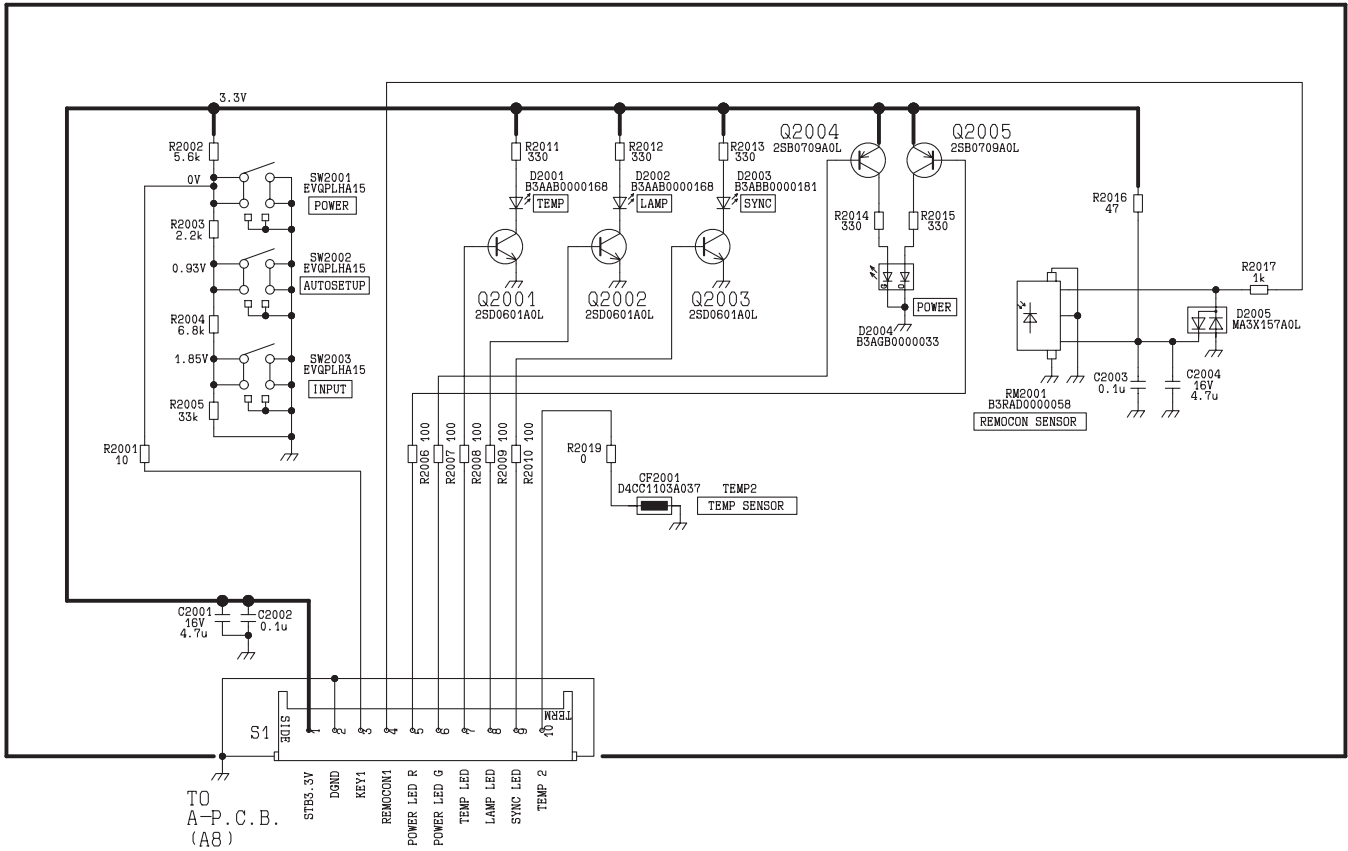


12.9. K-P.C.Board

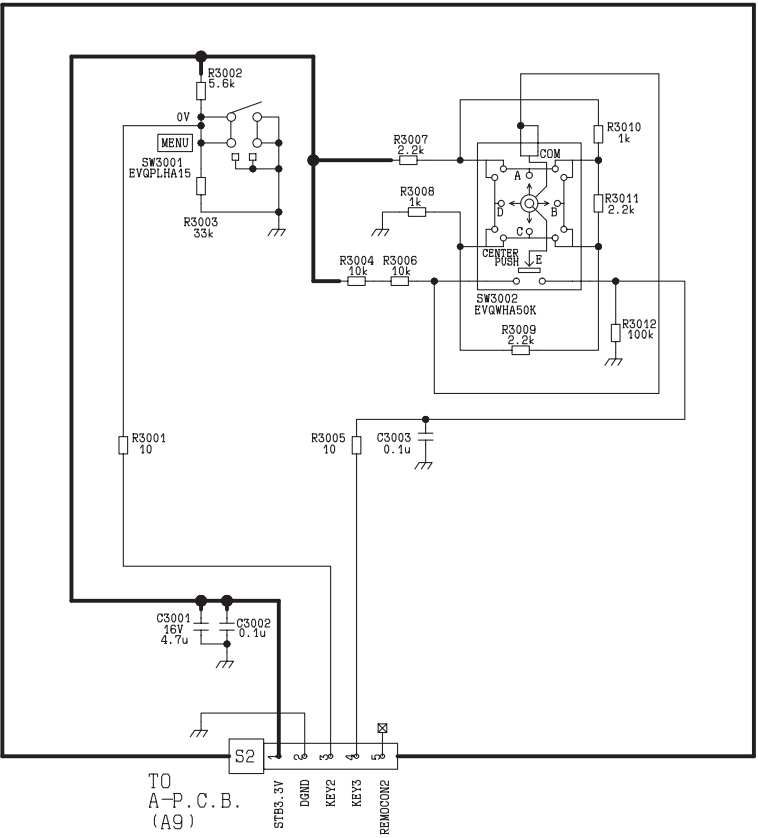


12.10. S1-P.C.Board, S2-P.C.Board

S1-P.C.Board      TNPA3144



S2-P.C.Board      TNPA3145







13 Circuit Boards

13.1. A-P.C.Board (Foil Side) / WL-P.C.Board (Foil Side / Component Side)

F

A-P.C.Board TXANP01PVMZ (LB10NT\*)  
(Foil Side) TXANP01PVNZ (LB10\*)  
TXANP01PVPZ (LB10V\*)  
TXANP01P000 (LB10S\*)

A-P.C.Board(Foil Side)									
IC		TRANSISTOR				TP			
IC1003	A-2	IC1023	B-3	Q1006	B-4	Q1022	B-1	TPA11	C-3
IC1004	A-2	IC1024	A-2	Q1008	A-4	Q1034	B-1	TPA12	C-4
IC1005	B-3	IC1027	C-4	Q1011	A-4	Q1040	C-4		
IC1006	B-4	IC1029	B-4	Q1012	A-4	Q1041	C-4		
IC1009	B-2	IC1032	C-4	Q1014	A-4	Q1043	B-1		
IC1010	C-4	IC1040	B-2	Q1015	B-1				
IC1012	C-4	IC1051	C-1	Q1016	B-1				
IC1013	C-5	IC1052	C-2	Q1017	B-1				
IC1016	B-3	IC1053	C-3	Q1018	B-1				
IC1018	C-5	IC1068	B-4	Q1019	B-1				
IC1021	B-1	IC1083	B-3	Q1021	B-1				

ADDRESS INFORMATION

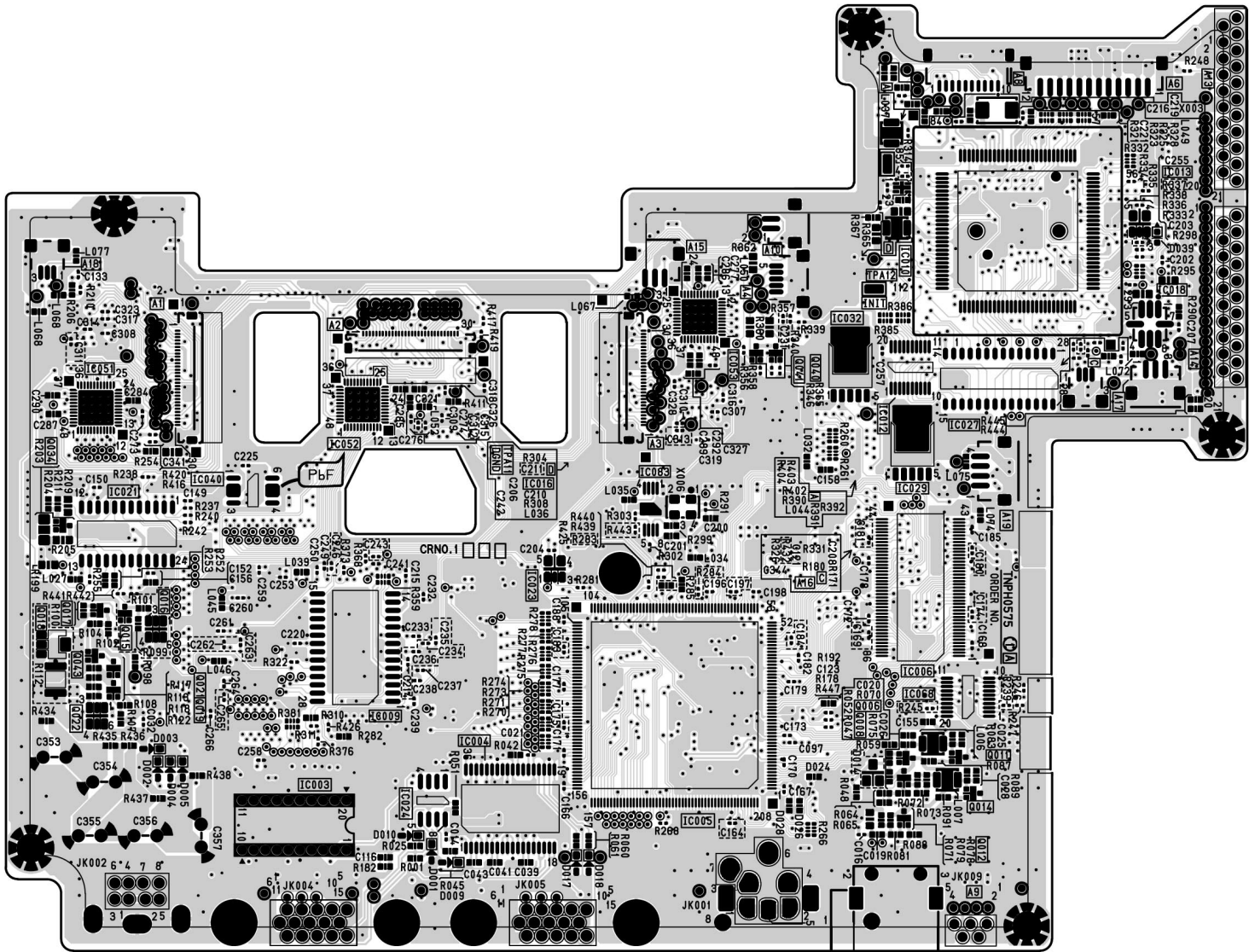
E

D

C

B

A



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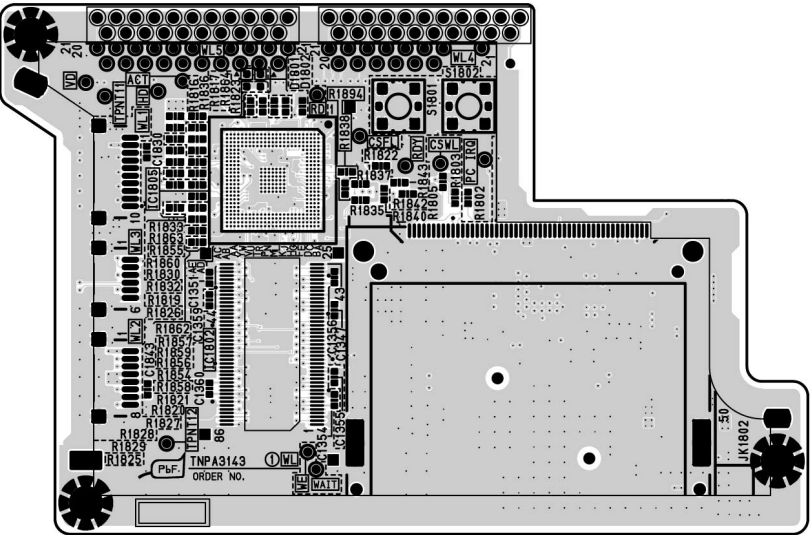
8

9

WL-P.C.Board TNPA3143 (LB10NT\*)  
(File Side)

WL-P.C.Board(Foil Side)			
IC		TP	
IC1802	D-7	TPA11	E-7
IC1805	E-7	TPA12	D-7

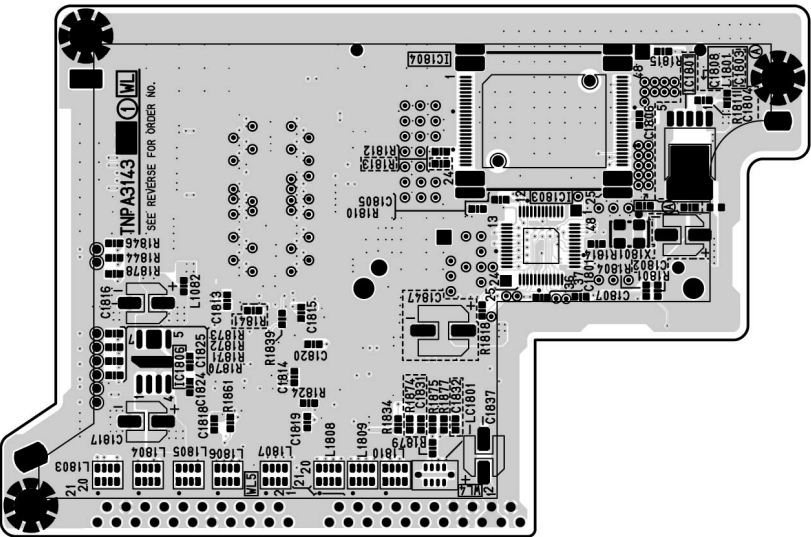
ADDRESS INFORMATION



WL-P.C.Board TNPA3143 (LB10NT\*)  
(Component Side)

WL-P.C.Board(Component Side)		
IC		
IC1803	B-8	IC1806
IC1804	B-8	A-7

ADDRESS INFORMATION



13.2. A-P.C.Board (Component) / S1-P.C.Board (Foil Side / Component Side)

F

E

D

C

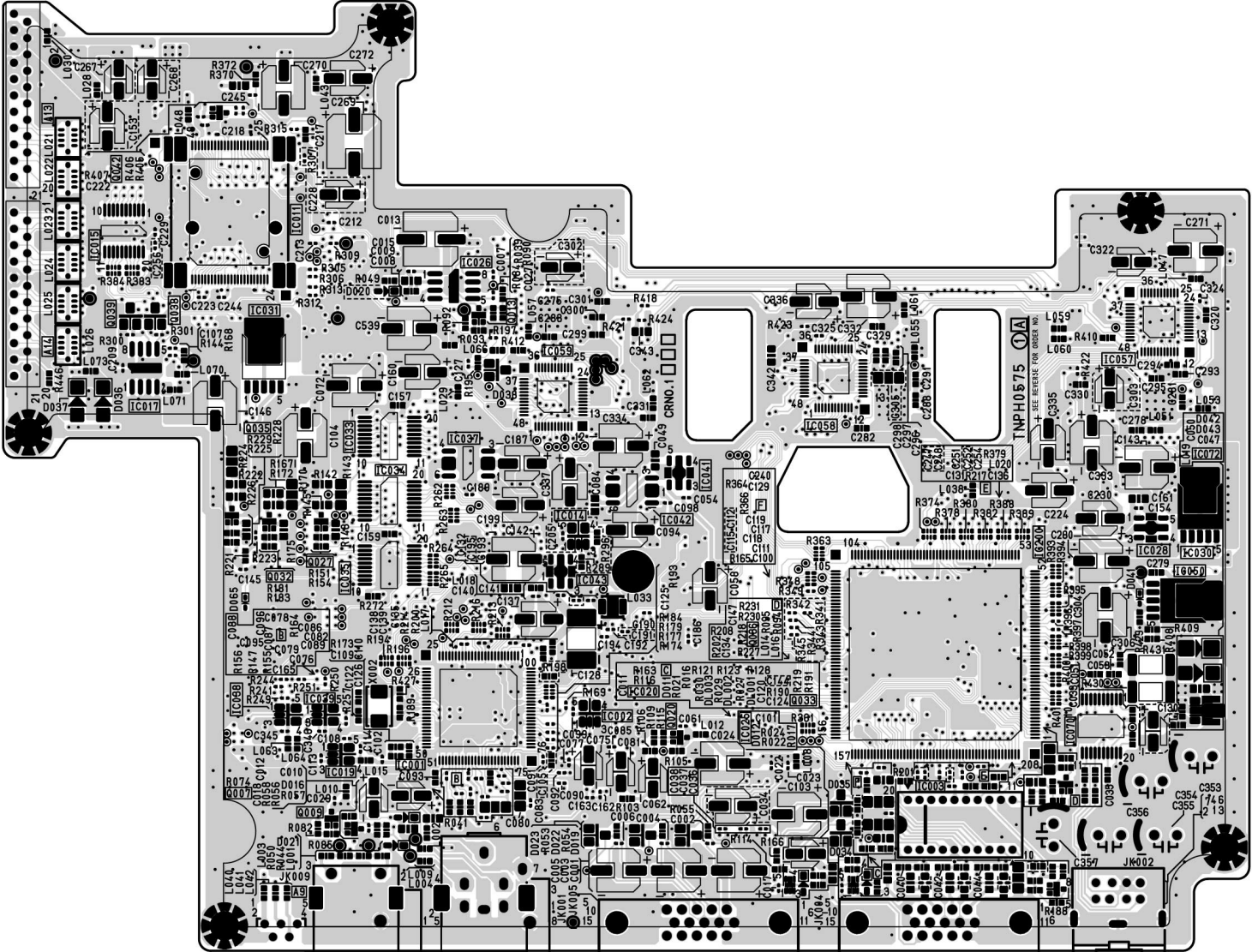
B

A

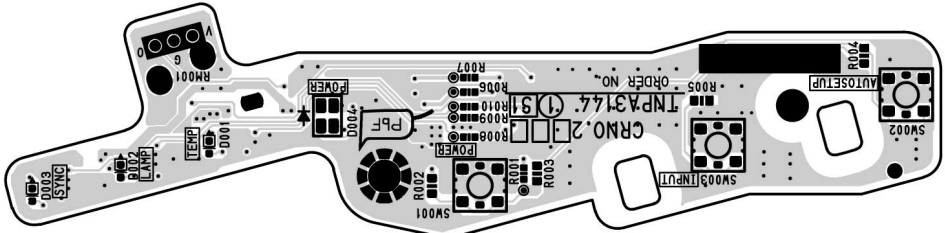
A-P.C.Board TXANP01PVMZ (LB10NT\*)  
(Component Side) TXANP01PVNZ (LB10\*)  
TXANP01PVPZ (LB10V\*)  
TXANP01P000 (LB10S\*)

A-P.C.Board(Component Side)					
IC				TRANSISTOR	
IC1001	A-2	IC1034	B-2	Q1007	A-2
IC1002	B-3	IC1035	B-2	Q1009	A-2
IC1003	A-4	IC1037	C-2	Q1013	C-3
IC1011	C-2	IC1038	B-2	Q1020	B-3
IC1014	B-3	IC1039	B-2	Q1027	B-2
IC1015	C-1	IC1041	B-3	Q1032	B-2
IC1017	C-1	IC1042	B-3	Q1033	B-4
IC1019	A-2	IC1043	B-3	Q1035	C-2
IC1020	B-3	IC1050	B-5	Q1036	B-4
IC1025	B-3	IC1057	C-5	Q1038	C-1
IC1026	C-2	IC1058	C-4	Q1039	C-1
IC1028	B-5	IC1059	C-3	Q1042	D-1
IC1030	B-5	IC1070	A-5		
IC1031	C-2	IC1072	B-5		
IC1033	C-2	IC1200	B-4		

ADDRESS INFORMATION



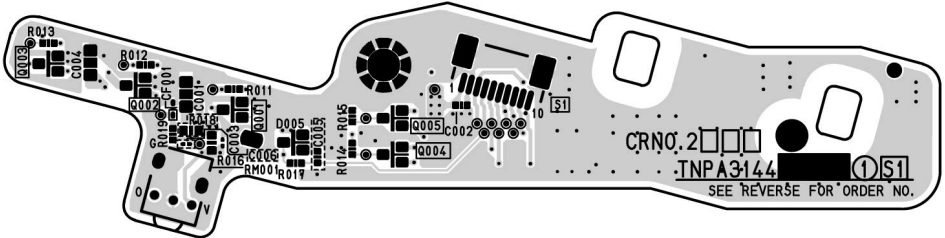
S1-P.C.Board TNPA3144  
(File Side)



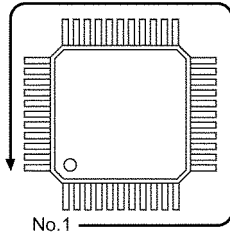
S1-P.C.Board TNPA3144  
(Component Side)

S1-P.C.Board(Component Side)			
TRANSISTOR			
Q2001	B-7	Q2004	B-7
Q2002	B-6	Q2005	B-7
Q2003	B-6		

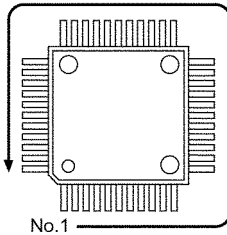
ADDRESS INFORMATION



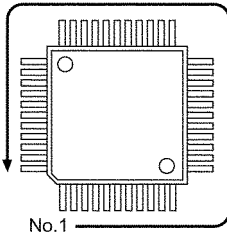
# 14 Terminal guide of ICs and transistors



C1AB00001774 48 Pin  
C1AB00001673 48 Pin  
C1AB00001910 100 Pin  
TVRN203 48 Pin



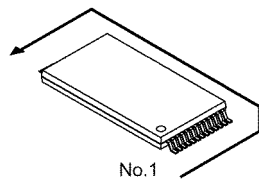
C1AB00001913 208 Pin  
C1AB00001721 208 Pin



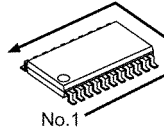
C2DBYH000017 112 Pin



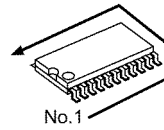
C2GBC0000199



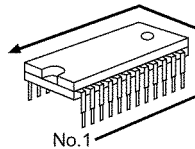
TVRN126 48 Pin



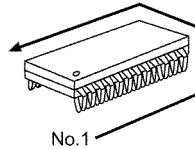
M62398FP 24 Pin  
C0ZBZ0000889 28 Pin  
C0ZBZ0000890 28 Pin  
C0JBAF000379 20 Pin  
C3ABPJ000035 86 Pin  
C0JBAZ000855 20 Pin  
AN5870SB-E1V 36 Pin  
C1CB00001014 20 Pin  
C0JBAZ001633 20 Pin



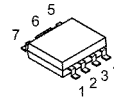
C3ABQJ000023 86 Pin



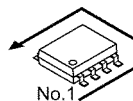
M52036SP 20 Pin



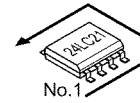
C3BBFC000290 28 Pin



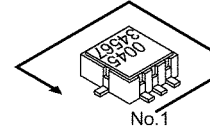
C0DBFFD00003 7 Pin



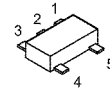
C0JBAA000244 14 Pin  
C3EBCC000020 8 Pin  
C0JBAZ002128 8 Pin



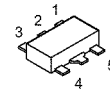
C1BB00000840 8 Pin  
C3EBJC000038 8 Pin



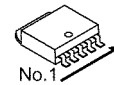
C1GB00000062 8 Pin



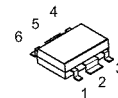
C0CBCAC00096 5 Pin  
C0JBAE000239 5 Pin  
C0JBAZ001870 5 Pin  
C0JBAZ002115 5 Pin



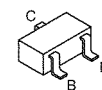
C0DBZJD00003 5 Pin  
C0DBZHD00005 5 Pin



C0DBEZE00002 5 Pin  
C0DBEKG00004 5 Pin



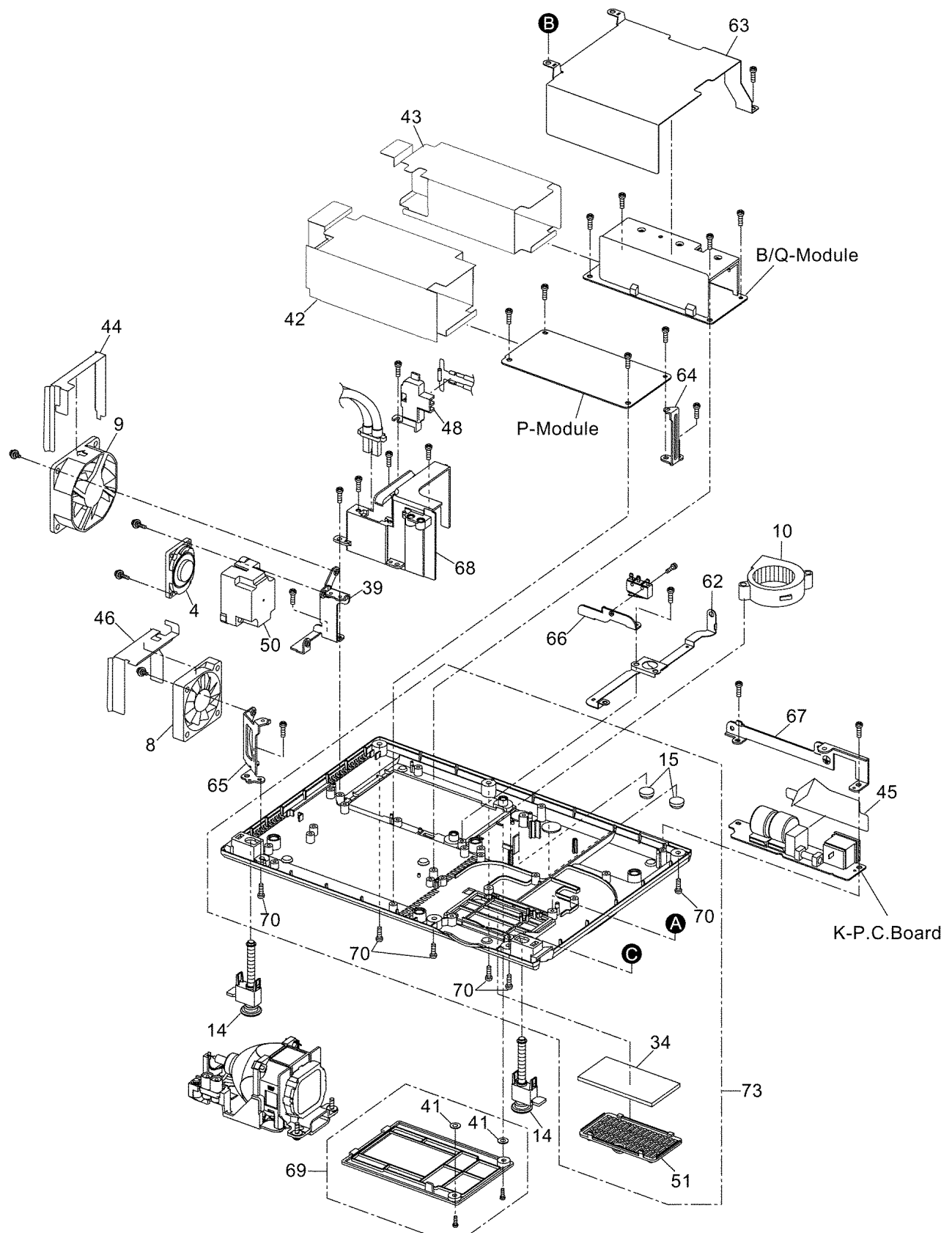
C0DBZFF00004 6 Pin  
C0DBZFF00003 6 Pin  
C0DBZGF00002 6 Pin



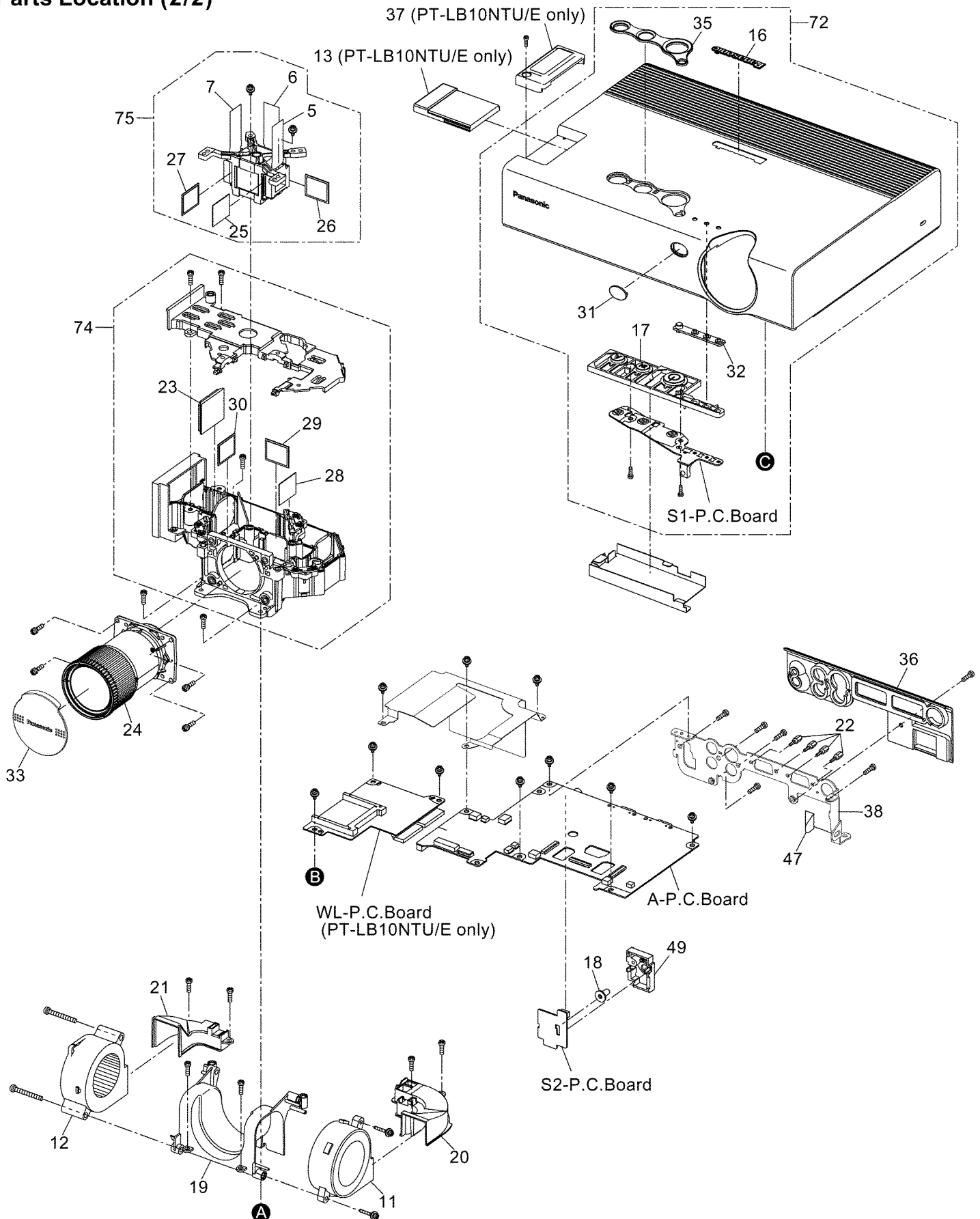
2SB709A  
2SD601AR  
2SB710A

# 15 Exploded Views

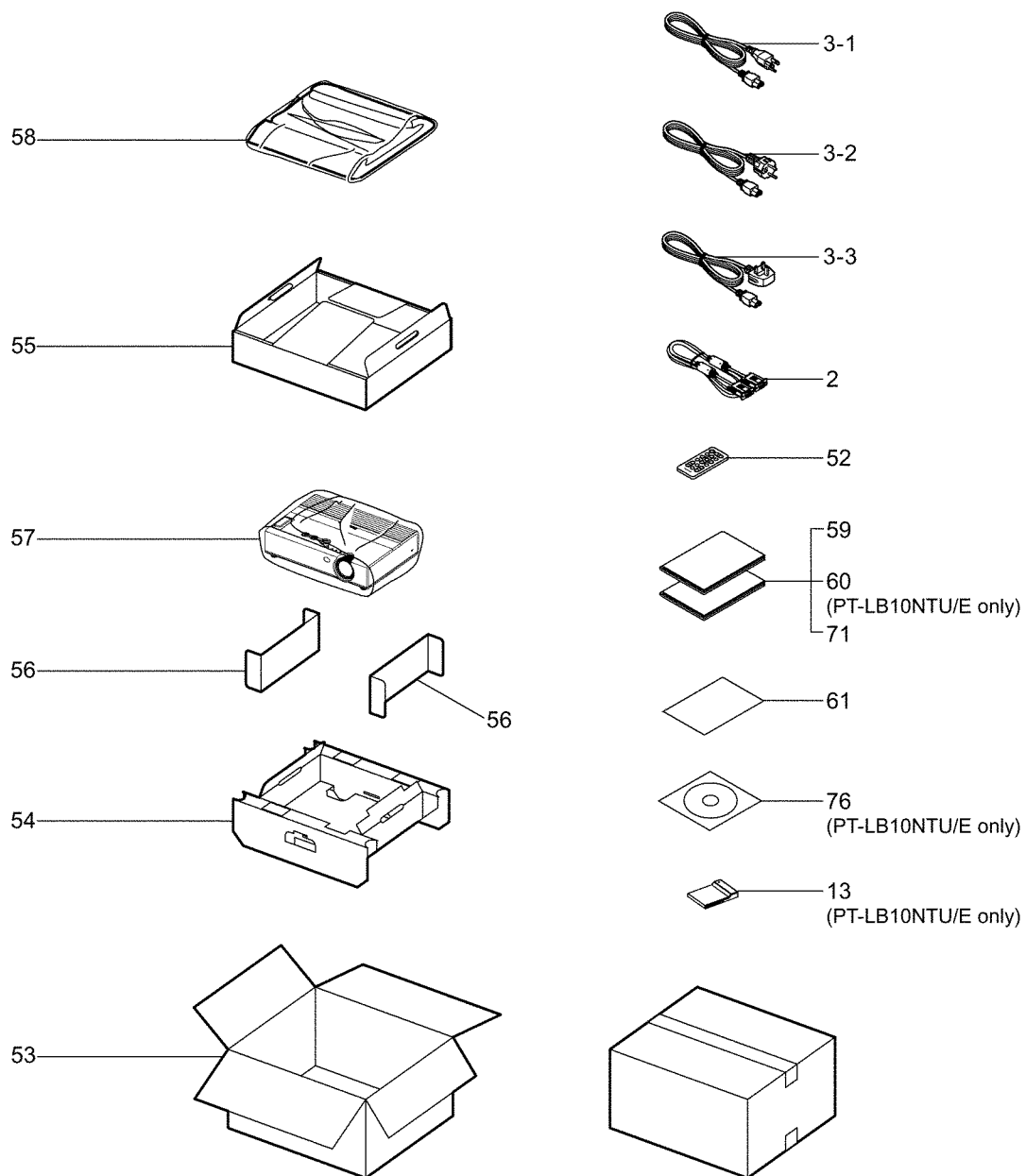
## Parts Location (1/2)



## Parts Location (2/2)




## Packing Parts



# 16 Replacement Parts List

## Important Safety Notice

Components identified by the International symbol  have special characteristics important for safety.  
When replacing any of these components, use only the manufacturer's specified parts.

### Abbreviation of part name and description

#### 1. Resistor

Example:

ERD25TJ104 C 100KOHM, J, 1/4W

TYPE ALLOWANCE

TYPE	ALLOWANCE
C : Carbon	F : - 1 %
F : Fuse	G : - 2 %
M : Metal Oxide Metal Film	J : - 5 %
S : Solid	K : -10%
W : Wire Wound	M : -20%

#### 2. Capacitor

Example:












ECKF1H103ZF C 0.01PF, Z, 50V

TYPE ALLOWANCE

TYPE	ALLOWANCE
C : Ceramic	C : -0.25 pF
E : Electrolytic	D : -0.5 pF
P : Polyester	F : - 1 pF
PP : Polypropylene	J : - 5 %
S : Polystyrol	K : -10 %
T : Tantalum	L : -15 %
	M : -20 %
	P : +100 %, -0 %
	Z : +80 %, -20 %

### Notes:

Printed circuit board assembly with mark (RTL) is no longer available after production discontinuation of the complete set.

Ref. No.	Part No.	Part Name & Description	Remarks
[MECHANICAL PARTS]			
	D4CDH5030001	THERMISTER	
	J0KG00000036	CORE	
2	K1HA15DA0002	CABLE	
3-1	K2CG3DR00005	POWER CORD	 LB10NTU, LB10U, LB10VU, LB10SU
3-2	K2CM3DR00002	POWER CORD (EUROPE)	 LB10NTE, LB10E, LB10VE, LB10SE
3-3	K2CT3DR00005	POWER CORD (U.K)	 LB10NTE, LB10E, LB10VE, LB10SE
4	L0AA04C00004	SPEAKER	
5	L5BDAXQ00143	LIQUID CRYSTAL DISPLAY (R)	LB10NTU/E, LB10U/E
	L5BDAXQ00131	LIQUID CRYSTAL DISPLAY (R)	LB10VU/E
	L5BDAXN00073	LIQUID CRYSTAL DISPLAY (R)	LB10SU/E
6	L5BDAXQ00144	LIQUID CRYSTAL DISPLAY (G)	LB10NTU/E, LB10U/E
	L5BDAXQ00132	LIQUID CRYSTAL DISPLAY (G)	LB10VU/E
	L5BDAXN00074	LIQUID CRYSTAL DISPLAY (G)	LB10SU/E
7	L5BDAXQ00145	LIQUID CRYSTAL DISPLAY (B)	LB10NTU/E, LB10U/E
	L5BDAXQ00133	LIQUID CRYSTAL DISPLAY (B)	LB10VU/E
	L5BDAXN00075	LIQUID CRYSTAL DISPLAY (B)	LB10SU/E
8	L6FAJACH0005	POWER FAN	
9	L6FAKDEH0005	VENTILATION FAN	
10	L6FCHC9H0002	PBS FAN	
11	L6FCKEAB0002	SIROCCO FAN	
12	L6FCKEBH0002	SIROCCO FAN	
13	N5HBD0000028	LAN CARD	 LB10NTU
	N5HBD0000029	LAN CARD	 LB10NTE
14	TBLB0046	ADJUST LEG	

Ref. No.	Part No.	Part Name & Description	Remarks
15	TBLG3063	RUBBER LEG (REAR)	
16	TBMA150	PANASONIC BADGE	
	TBMF414	MODEL NAME PLATE	LB10NTU
	TBMF415	MODEL NAME PLATE	LB10NTE
	TBMF417	MODEL NAME PLATE	LB10U
	TBMF418	MODEL NAME PLATE	LB10E
	TBMF420	MODEL NAME PLATE	LB10VU
	TBMF421	MODEL NAME PLATE	LB10VE
	TBMF570	MODEL NAME PLATE	LB10SU
	TBMF571	MODEL NAME PLATE	LB10SE
	TBMF423	MODEL NO. LABEL	LB10NTU
	TBMF424	MODEL NO. LABEL	LB10NTE
	TBMF426	MODEL NO. LABEL	LB10U
	TBMF427	MODEL NO. LABEL	LB10E
	TBMF429	MODEL NO. LABEL	LB10VU
	TBMF430	MODEL NO. LABEL	LB10VE
	TBMF573	MODEL NO. LABEL	LB10SU
	TBMF574	MODEL NO. LABEL	LB10SE
17	TBXA38201-1	CONTROL BUTTON	
18	TBXA38301-1	CURSOR BUTTON	
19	TEEC5112	DUCT 1	
20	TEEC5148	DUCT 2	
21	TEEC5149	DUCT 3	
	THEA124N	SCREW	LB10NTU/E
22	THEC035N	SCREW	
23	TKGF0088-1	PBS	
24	TKGF0092-1	LENS	LB10NTU/E, LB10U/E, LB10SU/E
	TKGF0093	LENS	LB10VU/E
25	TKGP5226	POLARIZING PLATE/OUT (R)	
26	TKGP5227	POLARIZING PLATE/OUT (G)	
27	TKGP5228-1	POLARIZING PLATE/OUT (B)	
28	TKGP5229	POLARIZING PLATE/IN (R)	
29	TKGP5230	POLARIZING PLATE/IN (G)	
30	TKGP5231	POLARIZING PLATE/IN (B)	



Ref. No.	Part No.	Part Name & Description	Remarks
31	TKKC5142	REMOTE RECEIVER PLATE(F)	
32	TKKC5167	LED PLATE	
33	TKKL5297	LENS CAP	
	TKLA0701	6 ANGLE WRENCH	LB10NTU/E
34	TKNE051	FILTER	
35	TKPA75202	BUTTON DECORATION BOARD	LB10NTU/E, LB10U/E, LB10SU/E
	TKPA75201	BUTTON DECORATION BOARD	LB10VU/E
36	TKPA86901	TERMINAL COVER	
37	TKXA17301	CARD LOCK	LB10NTU/E
38	TKZF5034	TERMINAL METAL	
39	TKZJ5053	VENTILATION FAN METAL	
	TKZJ5054	FAN GUARD METAL	
	TMKG389	FAN SPONGE	
	TMKG396-1	SPEAKER SPACER	
	TMKG422	SPACER	
41	TMKX100	WASHER	
	TMKX511	SHELTER SHEET	
42	TMKX661	POWER INSULATION SHEET	
43	TMKX662	BALLAST INSULATION SHEET	
44	TMKX663	VENTILATION FAN GUARD	
45	TMKX664	INSULATION SHEET (K-PCB)	
	TMKX665	GUIDE PLATE	
46	TMKX689	POWER FAN COVER	
47	TMKX703	SHEET	
48	TMXC020	TEMP FUSE METAL	
49	TMXE034-1	HOLDER	
50	TMZK5021	SPEAKER BOX	
51	TMZX5034	FILTER COVER	
52	TNQE239	REMOTE CONTROLLER	
53	TPCB57402	CARTON	LB10NTU
	TPCB57403	CARTON	LB10NTE
	TPCB57405	CARTON	LB10U
	TPCB57406	CARTON	LB10E
	TPCB57408	CARTON	LB10VU
	TPCB57409	CARTON	LB10VE
	TPCB57412	CARTON	LB10SU
	TPCB57413	CARTON	LB10SE
54	TPDF1041	CUSHION 1	
55	TPDF1042	ACCESSORY CARTON	
56	TPDF1066	CUSHION 2	
57	TPEH124-1	SET COVER	
58	TPEP013	CARRING CASE	
	TQB817002-1	SAFETY SHEET	LB10NTU, LB10U, LB10VU, LB10SU
60	TQBH0149	INSTRUCTION BOOK (SUB)	△ LB10NTU/E
61	TQBH7017	SHEET (PASSWORD)	
59	TQBJ0141	INSTRUCTION BOOK	△ LB10NTU, LB10U, LB10VU, LB10SU
	TQBJ0142	INSTRUCTION BOOK	△ LB10NTE, LB10E, LB10VE, LB10SE
	TQD1712010	LABEL	
	TQDJ18004	GUARANTEE CARD (CANADA)	LB10NTU, LB10U, LB10VU, LB10SU
	TQDJ18015-6	GUARANTEE CARD (USA)	LB10NTU, LB10U, LB10VU, LB10SU
	TQDJ19009	SIMPLE SHEET	LB10NTU
	TQDJ19010	SIMPLE SHEET (U.K, SPAIN)	LB10NTE
	TQDJ19011	SIMPLE SHEET (FRANCE, ITALY)	LB10NTE
	TQDJ19012	SIMPLE SHEET (GERMANY, KOREA)	LB10NTE

Ref. No.	Part No.	Part Name & Description	Remarks
	TQF86202	LABEL	
	TSKA159	CORE	J0KG00000011
	TSXL405	FLEX CABLE	△
	TUCB5027	ALUMINUM SHEET	
62	TUCX5161	EARTH METAL 1	
63	TUCX5162	EARTH METAL 2	
64	TUCX5163	EARTH METAL (A-PCB)	
65	TUCX5164	EARTH METAL (WL-PCB)	
66	TUWC051	INTERLOCK METAL	
67	TUWC052	METAL	
68	TXFEE01VJW5	LAMP HOUSE	
69	TXFKL01VJW5	LAMP COVER ASSY	
	TXJ/B1VJW5	LEAD WIRE (B1-P2)	△
	TXJ/L2VJW5	LAMP CABLE	
	TXJ/P1VJW5	LEAD WIRE (K1-P1)	△
	TXJ/P3VJW5	LEAD WIRE (P3-A6)	△
	TXJ/Q3VJW5	LEAD WIRE (Q3-A4)	△
	XSB3+8FN	SCREW	
70	XTBT969Z	SCREW	
	XTN3+6G	SCREW	
	XTW3+8P	TAPPING SCREW	
	XYN2+F6	SCREW	
	XYN2+J10	SCREW	
	XYN3+F10	SCREW	
	XYN3+F14	SCREW	
	XYN3+F30FZ	SCREW	
	XYN3+F8	SCREW	LB10NTU/E
	XYN3+J8	SCREW	
	XYN4+E8	SCREW	
71	XZBT6532	POLY BAG	LB10NTU/E, LB10U, LB10VU
72	TXFKF99PVMZ	UPPER COVER	LB10NTU/E
	TXFKF99PVNZ	UPPER COVER	LB10U/E, LB10SU/E
	TXFKF99PVPZ	UPPER COVER	LB10VU/E
73	TXFKF98PVMZ	BOTTOM COVER	LB10NTU
	TXFKF98PVQZ	BOTTOM COVER	LB10NTE
	TXFKF98PVNZ	BOTTOM COVER	LB10U
	TXFKF99PVRZ	BOTTOM COVER	LB10E
	TXFKF98PVPZ	BOTTOM COVER	LB10VU
	TXFKF99PVSZ	BOTTOM COVER	LB10VE
	TXFKF99PXAZ	BOTTOM COVER	LB10SU
	TXFKF99PXBZ	BOTTOM COVER	LB10SE
74	TXFEC98VJW5	ANALYSIS BLOCK	
75	TXFEC99VJW5	OPTICAL BLOCK	LB10NTU/E, LB10U/E
	TXFEC99VJW7	OPTICAL BLOCK	LB10VU/E
	TXFEC99PXAZ	OPTICAL BLOCK	LB10SU/E
76	TXFQB99VJW5	CD-ROM	△ LB10NTU/E
[INTEGRATED CIRCUIT]			
IC1001	C1AB00001988	I.C	
IC1002	C0JBAA000233	I.C	
IC1003	M52036SP	I.C	C1AA000000392
IC1004	AN5870SB	I.C	
IC1005	C1AB00001913	I.C	
IC1006	C3ABPJ000035	I.C	
IC1009	C0ZBZ0000890	I.C	
IC1010	C2DBYH000017	I.C	
IC1011	TVRN126	I.C	LB10NTU/E, LB10U/E, LB10VU/E
	TVRN266	I.C	LB10SU/E
IC1012	74LVC574APWL	I.C	C0JBAF000379
IC1013	C0JBAAE000239	I.C	
IC1015	74LVC574APWL	I.C	C0JBAF000379
IC1016	C0EBE0000336	I.C	
IC1017	C3EBJC000038	I.C	
IC1018	C1GB00000062	I.C	
IC1019	C0CBCAC00096	I.C	
IC1020	C0JBAA000345	I.C	
IC1021	M62398FF	I.C	C0FBBD000087
IC1023	C0JBAAE000239	I.C	

Ref. No.	Part No.	Part Name & Description	Remarks
IC1024	24LC21T-I/SN	I.C	C3EBCC000020
IC1025	C0JBAA000345	I.C	
IC1026	C1BB00000840	I.C	
IC1027	C3BBFC000290	I.C	LB10NTU/E
IC1028	C0DBZJD00003	I.C	
IC1029	C0DBEZE00002	I.C	
IC1030	C0DBEZE00002	I.C	
IC1031	C0DBEZE00002	I.C	
IC1032	C0DBEZE00002	I.C	
IC1033	C0JBAZ001633	I.C	LB10NTU/E
IC1034	C0JBAZ001633	I.C	LB10NTU/E
IC1035	C0JBAZ001633	I.C	LB10NTU/E
IC1037	C0DBZFF00003	I.C	
IC1038	C0JBAZ001870	I.C	
IC1039	C0JBAZ002115	I.C	
IC1040	C0DBZFF00004	I.C	
IC1041	C0DBZHD00005	I.C	
IC1042	C0DBZGF00002	I.C	
IC1043	C0DBZFD00018	I.C	
IC1050	C0DBEKG00004	I.C	
IC1051	C1AB00001774	I.C	
IC1052	C1AB00001774	I.C	
IC1053	C1AB00001774	I.C	
IC1057	C1AB00001673	I.C	
IC1058	C1AB00001673	I.C	
IC1059	C1AB00001673	I.C	
IC1068	C0JBAZ000855	I.C	
IC1070	C1CB00001014	I.C	
IC1072	AN78L05M	I.C	
IC1083	C0JBAZ002128	I.C	
IC1200	C1AB00001721	I.C	
IC1802	C3ABQJ000023	I.C	LB10NTU/E
IC1803	TVRN203	I.C	LB10NTU/E
IC1804	TVRN150	I.C	LB10NTU/E
IC1805	C2GBC0000199	I.C	LB10NTU/E
IC1806	C0DBFFD00003	I.C	LB10NTU/E
IC9602	C0ZAZ0000077	I.C	
IC9603	C0ZAZ0000077	I.C	
[TRANSISTORS]			
Q1006	2SD1819A0L	TRANSISTOR	
Q1007	2SB1218A0L	TRANSISTOR	
Q1008	2SD1819A0L	TRANSISTOR	
Q1009	2SD1819A0L	TRANSISTOR	
Q1011	2SB1218A0L	TRANSISTOR	
Q1012	2SD1819A0L	TRANSISTOR	
Q1013	2SD1819A0L	TRANSISTOR	
Q1014	2SB1218A0L	TRANSISTOR	
Q1017	2SD1819A0L	TRANSISTOR	
Q1019	2SD1819A0L	TRANSISTOR	
Q1020	2SD1819A0L	TRANSISTOR	
Q1021	2SD1819A0L	TRANSISTOR	
Q1022	B1DHDD000020	TRANSISTOR	
Q1027	2SD1819A0L	TRANSISTOR	
Q1032	2SD1819A0L	TRANSISTOR	
Q1033	2SD1819A0L	TRANSISTOR	
Q1034	2SD1819A0L	TRANSISTOR	
Q1035	2SD1819A0L	TRANSISTOR	
Q1036	2SB1218A0L	TRANSISTOR	
Q1038	B1CBHD000001	TRANSISTOR	
Q1039	B1CBHD000001	TRANSISTOR	
Q1040	2SD1819A0L	TRANSISTOR	
Q1041	2SD1819A0L	TRANSISTOR	
Q1042	2SD1819A0L	TRANSISTOR	
Q1043	2SD1819A0L	TRANSISTOR	
Q2001	2SD601A-R	TRANSISTOR	2SD0601AR
Q2002	2SD601A-R	TRANSISTOR	2SD0601AR
Q2003	2SD601A-R	TRANSISTOR	2SD0601AR
Q2004	2SB709A	TRANSISTOR	2SB0709A
Q2005	2SB709A	TRANSISTOR	2SB0709A
Q9603	B1DEGQ000017	TRANSISTOR	
Q9604	2SB710A	TRANSISTOR	2SB0710A

Ref. No.	Part No.	Part Name & Description	Remarks
Q9605	2SB710A	TRANSISTOR	2SB0710A
Q9606	B1DEGM000022	TRANSISTOR	
Q9607	B1DEGM000022	TRANSISTOR	
Q9608	2SB710A	TRANSISTOR	2SB0710A
Q9609	2SB710A	TRANSISTOR	2SB0710A
Q9610	B1DEGM000022	TRANSISTOR	
Q9611	B1DEGM000022	TRANSISTOR	
Q9614	B1DEGQ000017	TRANSISTOR	
[DIODES]			
D1001	MAZ80560ML	DIODE	
D1002	MAZ81500ML	DIODE	
D1003	MAZ81500ML	DIODE	
D1004	MAZ81500ML	DIODE	
D1005	MAZ81500ML	DIODE	
D1009	MAZ80560ML	DIODE	
D1010	MAZ80560ML	DIODE	
D1011	MAZ80560ML	DIODE	
D1012	MAZ80560ML	DIODE	
D1016	MAZ80560ML	DIODE	
D1017	MAZ80560ML	DIODE	
D1018	MAZ80560ML	DIODE	
D1019	MA157A	DIODE	MA3X157A
D1021	MAZ80560ML	DIODE	
D1022	MA157A	DIODE	MA3X157A
D1023	MA157A	DIODE	MA3X157A
D1024	MA157A	DIODE	MA3X157A
D1026	MA157A	DIODE	MA3X157A
D1028	MA157A	DIODE	MA3X157A
D1034	MA157A	DIODE	MA3X157A
D1035	MA157A	DIODE	MA3X157A
D1036	B0JCPD000010	DIODE	
D1037	B0JCPD000010	DIODE	
D1038	MA3X152E0L	DIODE	
D1039	LNJ208R8ARA	LED	
D1041	MA2S11100L	DIODE	
D1042	MAZY12000L	DIODE	
D1043	B0HCMM000001	DIODE	
D1065	D4CC1103A037	THERMISTOR	
D2001	B3AAB0000168	DIODE	
D2002	B3AAB0000168	DIODE	
D2003	B3ABB0000181	DIODE	
D2004	LNJ107W5ARA1	LED	
D2005	MA157A	DIODE	MA3X157A
D9101	ERZV10D751	VARISTOR	△
D9601	B0HASR000006	DIODE	
D9604	MA158	DIODE	MA3X158
D9605	MA2Z72000L	DIODE	
D9606	MA158	DIODE	MA3X158
D9607	MA2Z72000L	DIODE	
D9608	MA158	DIODE	MA3X158
D9609	MA2Z72000L	DIODE	
D9611	MA158	DIODE	MA3X158
D9612	MA2Z72000L	DIODE	
D9616	D1FL40F4063	DIODE	B0EHP000001
D9617	MA2Z72000L	DIODE	
D9618	MA2Z72000L	DIODE	
D9619	MA2Z72000L	DIODE	
D9629	MA2Z72000L	DIODE	
D9621	MA2Z72000L	DIODE	
D9622	D1FL40F4063	DIODE	B0EHP000001
D9623	D1FL40F4063	DIODE	B0EHP000001
D9624	MA2Z72000L	DIODE	
D9625	MA2Z72000L	DIODE	
D9626	MA2Z72000L	DIODE	
D9627	MA2Z72000L	DIODE	
D9628	MA2Z72000L	DIODE	
D9629	D1FL40F4063	DIODE	B0EHP000001
[COILS]			
L1001	J0JCC0000168	FILTER	

Ref. No.	Part No.	Part Name & Description	Remarks
L1002	J0JCC0000168	FILTER	
L1003	J0JCC0000168	FILTER	
L1004	J0JCC0000168	FILTER	
L1005	J0JJC0000022	EMI FILTER	
L1006	ELJFA150JF	COIL	
L1007	ELJFA150JF	COIL	
L1008	J0JJC0000022	EMI FILTER	
L1009	J0JCC0000168	FILTER	
L1010	J0JJC0000022	EMI FILTER	
L1011	J0JJC0000022	EMI FILTER	
L1012	J0JJC0000022	EMI FILTER	
L1014	J0JCC0000168	FILTER	
L1015	J0JJC0000022	EMI FILTER	
L1016	J0JCC0000168	FILTER	
L1017	J0JJC0000022	EMI FILTER	
L1018	J0JJC0000022	EMI FILTER	
L1019	J0JJC0000022	EMI FILTER	
L1020	J0JJC0000022	EMI FILTER	
L1021	EZASCE101M	CAPACITOR ARRAY	LB10NTU/E
L1022	EZASCE101M	CAPACITOR ARRAY	LB10NTU/E
L1023	EZASCE101M	CAPACITOR ARRAY	LB10NTU/E
L1024	EZASCE101M	CAPACITOR ARRAY	LB10NTU/E
L1025	EZASCE101M	CAPACITOR ARRAY	LB10NTU/E
L1026	EZASCE101M	CAPACITOR ARRAY	LB10NTU/E
L1027	J0JJC0000022	EMI FILTER	
L1028	J0JJC0000022	EMI FILTER	LB10NTU/E
L1029	J0JJC0000022	EMI FILTER	LB10NTU/E
L1030	J0JJC0000022	EMI FILTER	LB10NTU/E
L1031	J0JJC0000022	EMI FILTER	
L1032	J0JJC0000022	EMI FILTER	
L1033	ELJFA470JF	COIL	
L1034	J0JJC0000022	EMI FILTER	
L1035	J0JCC0000238	FILTER	LB10NTU/E, LB10U/E, LB10VU/E
	J0JCC0000168	FILTER	LB10SU/E
L1036	ELJFA6R8JB	CHIP COIL	
L1037	ELJFA470JF	COIL	
L1038	J0JJC0000022	EMI FILTER	
L1039	J0JCC0000238	FILTER	LB10NTU/E, LB10U/E, LB10VU/E
	J0JCC0000168	FILTER	LB10SU/E
L1040	J0JJC0000022	EMI FILTER	
L1041	J0JJC0000022	EMI FILTER	
L1042	J0JJC0000022	EMI FILTER	
L1043	J0JJC0000022	EMI FILTER	
L1044	J0JJC0000022	EMI FILTER	
L1045	J0JCC0000238	FILTER	LB10NTU/E, LB10U/E, LB10VU/E
	J0JCC0000168	FILTER	LB10SU/E
L1046	J0JCC0000238	FILTER	LB10NTU/E, LB10U/E, LB10VU/E
	J0JCC0000168	FILTER	LB10SU/E
L1047	J0JJC0000022	EMI FILTER	
L1048	J0JJC0000022	EMI FILTER	
L1049	J0JJC0000022	EMI FILTER	
L1050	J0JJC0000022	EMI FILTER	
L1051	J0JJC0000022	EMI FILTER	
L1052	J0JJC0000022	EMI FILTER	
L1053	J0JJC0000022	EMI FILTER	
L1054	ERJ3GEY0R00	M 0 OHM, 1/16W	
L1055	J0JJC0000022	EMI FILTER	
L1056	ERJ3GEY0R00	M 0 OHM, 1/16W	
L1057	J0JJC0000022	EMI FILTER	
L1058	ERJ3GEY0R00	M 0 OHM, 1/16W	
L1059	J0JJC0000022	EMI FILTER	
L1060	J0JJC0000022	EMI FILTER	
L1061	J0JJC0000022	EMI FILTER	
L1062	J0JJC0000022	EMI FILTER	
L1063	J0JJC0000022	EMI FILTER	
L1064	J0JJC0000022	EMI FILTER	
L1066	J0JCC0000168	FILTER	

Ref. No.	Part No.	Part Name & Description	Remarks
L1067	J0JCC0000168	FILTER	
L1068	J0JCC0000168	FILTER	
L1069	J0JCC0000168	FILTER	
L1070	J0JCC0000168	COIL	
L1071	J0JCC0000168	COIL	
L1072	J0JCC0000168	COIL	
L1073	J0JCC0000168	COIL	
L1074	J0JCC0000168	COIL	
L1075	J0JCC0000168	COIL	
L1077	J0JCC0000168	COIL	
L1082	J0JJC0000022	EMI FILTER	LB10NTU/E
L1801	EXCML16A270	COIL	LB10NTU/E
L1803	J0JBD0000007	COIL	LB10NTU/E
L1804	J0JBD0000007	COIL	LB10NTU/E
L1805	J0JBD0000007	COIL	LB10NTU/E
L1806	J0JBD0000007	COIL	LB10NTU/E
L1807	J0JBD0000007	COIL	LB10NTU/E
L1808	J0JBD0000007	COIL	LB10NTU/E
L1809	J0JBD0000007	COIL	LB10NTU/E
L1810	J0JBD0000007	COIL	LB10NTU/E
LC1801	EZASCE101M	CAPACITOR ARRAY	LB10NTU/E
LF9001	G0B592H00001	COIL	
LF9002	G0B592H00001	COIL	
LF9101	G0B592H00001	COIL	△
LF9102	G0B592H00001	COIL	△
[RESISTORS]			
R1001	ERJ3GEYJ331	M 330 OHM, J, 1/16W	
R1016	ERJ6GEYJ472	M 4.7KOHM, J, 1/10W	
R1017	ERJ6GEYJ472	M 4.7KOHM, J, 1/10W	
R1021	ERJ3GEYJ101	M 100 OHM, J, 1/16W	D0GB101JA002
R1022	ERJ3GEYJ101	M 100 OHM, J, 1/16W	D0GB101JA002
R1024	ERJ3GEYJ472	M 4.7KOHM, J, 1/16W	
R1025	ERJ3GEYJ331	M 330 OHM, J, 1/16W	
R1027	ERJ6ENF75R0	M 75 OHM, 1/10W	
R1029	ERJ6ENF75R0	M 75 OHM, 1/10W	
R1030	ERJ6ENF75R0	M 75 OHM, 1/10W	
R1039	ERJ2GEJ100	M 10 OHM, 0.063W	
R1041	ERJ6GEYJ750	M 75 OHM, J, 1/10W	
R1042	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1044	ERJ3GEYJ223	M 22K OHM, J, 1/16W	
R1045	ERJ3GEYJ331	M 330 OHM, J, 1/16W	
R1047	ERJ3GEYJ472	M 4.7KOHM, J, 1/16W	
R1048	ERJ3GEYJ562	M 5.6KOHM, J, 1/16W	
R1049	ERJ3GEYJ183	M 18K OHM, J, 1/16W	
R1050	ERJ3GEYJ223	M 22K OHM, J, 1/16W	
R1051	ERJ3GEYJ473	M 47K OHM, J, 1/16W	
R1052	ERJ3GEYJ560	M 56 OHM, J, 1/16W	
R1053	ERJ3GEYJ5R1	M 5.1 OHM, J, 1/16W	
R1054	ERJ3GEYJ5R1	M 5.1 OHM, J, 1/16W	
R1055	ERJ3GEYJ5R1	M 5.1 OHM, J, 1/16W	
R1056	ERJ3GEYJ102	M 1K OHM, J, 1/16W	
R1057	ERJ6GEYJ750	M 75 OHM, J, 1/10W	
R1058	ERJ3GEYJ104	M 100KOHM, J, 1/16W	
R1059	ERJ3GEYJ471	M 470 OHM, J, 1/16W	
R1060	ERJ3GEYJ330	M 33 OHM, J, 1/16W	
R1061	ERJ3GEYJ330	M 33 OHM, J, 1/16W	
R1064	ERJ3GEYJ472	M 4.7KOHM, J, 1/16W	
R1065	ERJ3GEYJ562	M 5.6KOHM, J, 1/16W	
R1070	ERJ3GEYJ681	M 680 OHM, J, 1/16W	
R1071	ERJ6GEYJ750	M 75 OHM, J, 1/10W	
R1072	ERJ3GEYJ560	M 56 OHM, J, 1/16W	
R1073	ERJ3GEYJ471	M 470 OHM, J, 1/16W	
R1074	ERJ3GEYJ103	M 10K OHM, J, 1/16W	
R1075	ERJ3GEYJ681	M 680 OHM, J, 1/16W	
R1078	ERJ3GEYJ103	M 10K OHM, J, 1/16W	
R1079	ERJ3GEYJ103	M 10K OHM, J, 1/16W	
R1081	ERJ3GEYJ560	M 56 OHM, J, 1/16W	
R1082	ERJ3GEYJ682	M 6.8KOHM, J, 1/16W	
R1083	ERJ3GEYJ472	M 4.7KOHM, J, 1/16W	
R1084	ERJ3GEYJ122	M 1.2KOHM, J, 1/16W	
R1085	ERJ3GEYJ332	M 3.3KOHM, J, 1/16W	

Ref. No.	Part No.	Part Name & Description	Remarks
R1087	ERJ3GEYJ331	M 330 OHM, J, 1/16W	
R1088	ERJ3GEYJ471	M 470 OHM, J, 1/16W	
R1089	ERJ3GEYJ472	M 4.7KOHM, J, 1/16W	
R1090	ERJ3GEYJ103	M 10K OHM, J, 1/16W	
R1091	ERJ3GEYJ331	M 330 OHM, J, 1/16W	
R1092	ERJ3GEYJ103	M 10K OHM, J, 1/16W	
R1093	ERJ3GEYJ103	M 10K OHM, J, 1/16W	
R1094	ERJ3GEYJ101	M 100 OHM, J, 1/16W	D0GB101JA002
R1095	ERJ3GEYJ101	M 100 OHM, J, 1/16W	D0GB101JA002
R1098	ERJ3GEYJ103	M 10K OHM, J, 1/16W	
R1100	ERJ3GEYJ223	M 22K OHM, J, 1/16W	
R1102	ERJ3GEYJ103	M 10K OHM, J, 1/16W	
R1103	ERJ3GEYJ101	M 100 OHM, J, 1/16W	D0GB101JA002
R1104	ERJ3GEYJ101	M 100 OHM, J, 1/16W	D0GB101JA002
R1105	ERJ3GEYJ472	M 4.7KOHM, J, 1/16W	
R1106	ERJ3GEYJ562	M 5.6KOHM, J, 1/16W	
R1107	ERJ3GEYJ103	M 10K OHM, J, 1/16W	
R1108	ERJ3GEYJ223	M 22K OHM, J, 1/16W	
R1109	ERJ3GEYJ560	M 56 OHM, J, 1/16W	
R1113	ERJ3GEYJ103	M 10K OHM, J, 1/16W	
R1114	ERJ3GEYJ560	M 56 OHM, J, 1/16W	
R1115	ERJ3GEYJ471	M 470 OHM, J, 1/16W	
R1116	ERJ3GEYJ560	M 56 OHM, J, 1/16W	
R1117	ERJ3GEYJ223	M 22K OHM, J, 1/16W	
R1118	ERJ3GEYJ223	M 22K OHM, J, 1/16W	
R1121	ERJ3GEYJ180	M 18 OHM, J, 1/16W	
R1122	ERJ3GEYJ101	M 100 OHM, J, 1/16W	D0GB101JA002
R1123	ERJ3GEYJ180	M 18 OHM, J, 1/16W	
R1128	ERJ3GEYJ180	M 18 OHM, J, 1/16W	
R1142	ERJ6ENF2001	M 2KOHM, 1/10W	
R1143	ERJ8ENF1501	M 1.5KOHM, 1/8W	
R1144	ERJ2GEJ562	M 5.6KOHM, 0.063W	
R1145	ERJ6ENF39R0	M 39 OHM, 1/10W	
R1147	ERJ3GEYJ180	M 18 OHM, J, 1/16W	
R1148	ERJ6ENF2700	M 270 OHM, 1/10W	
R1151	ERJ3EKF1002	M 10K OHM, 1/16W	
R1154	ERJ3EKF3302	M 33K OHM, 1/16W	
R1155	ERJ3GEYJ180	M 18 OHM, J, 1/16W	
R1156	ERJ3GEYJ180	M 18 OHM, J, 1/16W	
R1163	ERJ3GEYJ391	M 390 OHM, J, 1/16W	D0GB391JA002
R1164	ERJ3EKF1371	M 1.37KOHM, 0.063W	
R1165	ERJ3GEYJ560	M 56 OHM, J, 1/16W	
R1166	ERJ3GEYJ102	M 1K OHM, J, 1/16W	
R1167	ERJ6ENF2001	M 2KOHM, 1/10W	
R1168	ERJ3GEYJ560	M 56 OHM, J, 1/16W	
R1169	ERJ2GEJ220	M 22 OHM, 0.063W	
R1170	ERJ8ENF1501	M 1.5KOHM, 1/8W	
R1171	ERJ2GEJ562	M 5.6KOHM, 0.063W	
R1172	ERJ6ENF39R0	M 39 OHM, 1/10W	
R1173	ERJ3EKF1741	M 1.74KOHM, 0.063W	
R1174	ERJ2GE0R00	M 0 OHM, 0.063W	
R1175	ERJ6ENF2700	M 270 OHM, 1/10W	
R1177	ERJ2GEJ220	M 22 OHM, 0.063W	
R1178	ERJ2GEJ220	M 22 OHM, 0.063W	
R1179	ERJ2GEJ220	M 22 OHM, 0.063W	
R1180	ERJ3GEYJ560	M 56 OHM, J, 1/16W	
R1181	ERJ3EKF1002	M 10K OHM, 1/16W	
R1182	ERJ3GEYJ104	M 100KOHM, J, 1/16W	
R1183	ERJ3EKF3302	M 33K OHM, 1/16W	
R1184	ERJ2GEJ220	M 22 OHM, 0.063W	
R1188	ERJ3GEYJ392	M 3.9KOHM, J, 1/16W	
R1189	ERJ3GEYJ105	M 1M OHM, J, 1/16W	
R1190	ERJ3GEYJ822	M 8.2KOHM, J, 1/16W	
R1191	ERJ3GEYJ183	M 18K OHM, J, 1/16W	
R1192	ERJ3GEYJ220	M 22 OHM, J, 1/16W	
R1193	EXB28V220J	RESISTOR ARRAY	
R1194	EXB28V220J	RESISTOR ARRAY	
R1195	ERJ3GEYJ560	M 56 OHM, J, 1/16W	
R1196	EXB28V560J	RESISTOR ARRAY	
R1197	ERJ2GEJ562	M 5.6KOHM, 0.063W	
R1199	ERJ6ENF2001	M 2KOHM, 1/10W	
R1200	ERJ3GEYJ330	M 33 OHM, J, 1/16W	
R1201	ERJ3GEYJ103	M 10K OHM, J, 1/16W	

Ref. No.	Part No.	Part Name & Description	Remarks
R1202	ERJ3GEYJ183	M 18K OHM, J, 1/16W	
R1203	ERJ8ENF1201	M 1.2KOHM, 1/8W	
R1204	ERJ3EKF3302	M 33K OHM, 1/16W	
R1205	ERJ6ENF39R0	M 39 OHM, 1/10W	
R1206	ERJ3GEYJ560	M 56 OHM, J, 1/16W	
R1208	ERJ6ENF2702	M 27KOHM, 1/10W	
R1209	ERJ6ENF2700	M 270 OHM, 1/10W	
R1210	ERJ2GEJ562	M 5.6KOHM, 0.063W	
R1211	ERJ3EKF1002	M 10K OHM, 1/16W	
R1212	EXB28V560J	RESISTOR ARRAY	
R1213	EXB28V560J	RESISTOR ARRAY	
R1214	ERJ2GEJ220	M 22 OHM, 0.063W	
R1216	EXB28V220J	RESISTOR ARRAY	
R1217	ERJ3GEYJ182	M 1.8KOHM, J, 1/16W	
R1218	ERJ3GEYJ272	M 2.7KOHM, J, 1/16W	
R1219	ERJ3GEYJ182	M 1.8KOHM, J, 1/16W	
R1221	ERJ3GEYJ560	M 56 OHM, J, 1/16W	
R1222	ERJ6ENF2001	M 2KOHM, 1/10W	
R1223	ERJ2GEJ562	M 5.6KOHM, 0.063W	
R1224	ERJ8ENF1201	M 1.2KOHM, 1/8W	
R1225	ERJ3EKF3302	M 33K OHM, 1/16W	
R1226	ERJ6ENF39R0	M 39 OHM, 1/10W	
R1227	ERJ3GEYJ103	M 10K OHM, J, 1/16W	
R1228	ERJ6ENF2700	M 270 OHM, 1/10W	
R1229	ERJ3EKF1002	M 10K OHM, 1/16W	
R1230	ERJ3GEYJ104	M 100KOHM, J, 1/16W	
R1231	ERJ3GEYJ391	M 390 OHM, J, 1/16W	D0GB391JA002
R1237	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1238	ERJ2GEJ101	M 100 OHM, 0.063W	
R1240	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1241	ERJ2GEJ220	M 22 OHM, 0.063W	
R1242	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1244	ERJ2GEJ220	M 22 OHM, 0.063W	
R1246	ERJ2GEJ681	M 680 OHM, 0.063W	
R1247	ERJ2GEJ681	M 680 OHM, 0.063W	
R1248	ERJ2GEJ103	M 10K OHM, 0.063W	LB10NTU/E
R1249	ERJ2GEJ220	M 22 OHM, 0.063W	
R1250	ERJ2GEJ220	M 22 OHM, 0.063W	
R1251	ERJ2GEJ220	M 22 OHM, 0.063W	
R1252	ERJ3GEYJ220	M 22 OHM, J, 1/16W	
R1253	ERJ3GEYJ220	M 22 OHM, J, 1/16W	
R1254	ERJ3GEYJ220	M 22 OHM, J, 1/16W	
R1255	ERJ2GEJ101	M 100 OHM, 0.063W	
R1257	ERJ2GEJ220	M 22 OHM, 0.063W	
R1260	EXB28V220J	RESISTOR ARRAY	LB10NTU/E
R1261	EXB28V220J	RESISTOR ARRAY	LB10NTU/E
R1262	EXB28V220J	RESISTOR ARRAY	LB10NTU/E
R1263	EXB28V220J	RESISTOR ARRAY	LB10NTU/E
R1264	EXB28V220J	RESISTOR ARRAY	LB10NTU/E
R1265	EXB28V220J	RESISTOR ARRAY	LB10NTU/E
R1266	EXB28V560J	RESISTOR ARRAY	
R1268	ERJ2GEJ220	M 22 OHM, 0.063W	
R1270	EXB28V560J	RESISTOR ARRAY	
R1271	EXB28V560J	RESISTOR ARRAY	
R1272	ERJ3GEYJ102	M 1K OHM, J, 1/16W	
R1273	EXB28V560J	RESISTOR ARRAY	
R1274	EXB28V560J	RESISTOR ARRAY	
R1275	EXB28V560J	RESISTOR ARRAY	
R1276	EXB28V560J	RESISTOR ARRAY	
R1277	EXB28V560J	RESISTOR ARRAY	
R1278	EXB28V560J	RESISTOR ARRAY	
R1281	ERJ2GEJ220	M 22 OHM, 0.063W	
R1282	ERJ3GEYJ681	M 680 OHM, J, 1/16W	
R1285	ERJ3GEYJ220	M 22 OHM, J, 1/16W	
R1290	ERJ3GEYJ301	M 300 OHM, J, 1/16W	
R1291	ERJ2GEJ102	M 1K OHM, 0.063W	
R1295	ERJ6ENF1203	M 120KOHM, 1/10W	
R1298	ERJ6ENF1203	M 120KOHM, 1/10W	
R1299	ERJ3GEYJ220	M 22 OHM, J, 1/16W	
R1300	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1301	ERJ2GEJ472	M 4.7KOHM, 0.063W	

Ref. No.	Part No.	Part Name & Description	Remarks
R1302	ERJ2GE0R00	M 0 OHM, 0.063W	LB10NTU/E, LB10U/E, LB10VU/E
R1303	ERJ2GE0R00	M 0 OHM, 0.063W	LB10NTU/E, LB10U/E, LB10VU/E
R1304	ERJ2GEJ103	M 10K OHM, 0.063W	
R1305	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1306	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1308	ERJ6ENF1004	M1000KOHM, 1/10W	
R1309	ERJ2GEJ103	M 10K OHM, 0.063W	
R1310	ERJ3GEYJ220	M 22 OHM, J, 1/16W	
R1311	ERJ2GEJ221	M 220 OHM, 0.063W	
R1312	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1313	ERJ2GEJ472	M 4.7KOHM, 0.063W	
R1314	ERJ2GEJ221	M 220 OHM, 0.063W	
R1315	ERJ2GEJ272	M 2.7KOHM, 0.063W	
R1321	ERJ2GEJ101	M 100 OHM, 0.063W	
R1322	ERJ2GEJ220	M 22 OHM, 0.063W	
R1323	EXB28V103J	RESISTOR ARRAY	
R1325	EXB28V103J	RESISTOR ARRAY	
R1326	ERJ2GEJ105	M 1M OHM, 0.063W	LB10NTU/E, LB10U/E
R1328	EXB28V103J	RESISTOR ARRAY	
R1331	ERJ2GEJ105	M 1M OHM, 0.063W	
R1332	EXB28V103J	RESISTOR ARRAY	
R1333	EXB28V103J	RESISTOR ARRAY	
R1334	ERJ2GEJ220	M 22 OHM, 0.063W	
R1335	ERJ2GEJ220	M 22 OHM, 0.063W	
R1336	ERJ2GEJ102	M 1K OHM, 0.063W	
R1337	ERJ2GEJ105	M 1M OHM, 0.063W	
R1338	ERJ2GEJ102	M 1K OHM, 0.063W	
R1339	ERJ2GEJ103	M 10K OHM, 0.063W	
R1340	ERJ2GEJ101	M 100 OHM, 0.063W	
R1346	ERJ2GEJ103	M 10K OHM, 0.063W	
R1348	EXB28V220J	RESISTOR ARRAY	
R1349	ERJ2GEJ220	M 22 OHM, 0.063W	
R1355	ERJ2GEJ562	M 5.6KOHM, 0.063W	
R1356	ERJ2GEJ103	M 10K OHM, 0.063W	
R1357	ERJ6GEYJ100	M 10 OHM, J, 1/10W	
R1358	ERJ2GEJ562	M 5.6KOHM, 0.063W	
R1359	EXB28V220J	RESISTOR ARRAY	
R1360	ERJ6GEYJ100	M 10 OHM, J, 1/10W	
R1361	EXB28V220J	RESISTOR ARRAY	
R1362	ERJ6GEYJ560	M 56 OHM, J, 1/10W	
R1363	EXB28V220J	RESISTOR ARRAY	
R1364	ERJ2GEJ220	M 22 OHM, 0.063W	
R1365	ERJ6ENF6801	M 6.8KOHM, 1/10W	
R1366	ERJ3GEYJ331	M 330 OHM, J, 1/16W	
R1367	ERJ3GEYJ102	M 1K OHM, J, 1/16W	
R1368	ERJ2GEJ220	M 22 OHM, 0.063W	
R1370	ERJ6ENF6801	M 6.8KOHM, 1/10W	
R1372	ERJ3GEYJ102	M 1K OHM, J, 1/16W	
R1373	ERJ2GEJ220	M 22 OHM, 0.063W	
R1374	EXB28V220J	RESISTOR ARRAY	
R1376	ERJ2GEJ221	M 220 OHM, 0.063W	
R1378	EXB28V220J	RESISTOR ARRAY	
R1379	ERJ2GEJ331	M 330 OHM, 0.063W	
R1380	EXB28V220J	RESISTOR ARRAY	
R1381	EXB28V102J	RESISTOR ARRAY	
R1382	EXB28V220J	RESISTOR ARRAY	
R1383	EXB28V102J	RESISTOR ARRAY	
R1384	EXB28V220J	RESISTOR ARRAY	
R1385	EXB28V102J	RESISTOR ARRAY	
R1386	EXB28V220J	RESISTOR ARRAY	
R1388	EXB28V220J	RESISTOR ARRAY	
R1389	EXB28V220J	RESISTOR ARRAY	
R1390	ERJ2GEJ101	M 100 OHM, 0.063W	
R1391	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1392	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1393	EXB28V220J	RESISTOR ARRAY	
R1394	EXB28V220J	RESISTOR ARRAY	
R1395	EXB28V220J	RESISTOR ARRAY	
R1396	ERJ2GEJ220	M 22 OHM, 0.063W	

Ref. No.	Part No.	Part Name & Description	Remarks
R1397	ERJ2GEJ220	M 22 OHM, 0.063W	
R1398	EXB28V220J	RESISTOR ARRAY	
R1399	EXB28V220J	RESISTOR ARRAY	
R1400	EXB28V220J	RESISTOR ARRAY	
R1401	EXB28V220J	RESISTOR ARRAY	
R1402	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1403	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1404	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1405	ERJ2GEJ102	M 1K OHM, 0.063W	
R1406	ERJ2GEJ103	M 10K OHM, 0.063W	
R1407	ERJ2GEJ562	M 5.6KOHM, 0.063W	
R1408	ERJ3EKF1473	M 147KOHM, 0.063W	
R1409	ERJ3EKF1002	M 10KOHM, 1/16W	
R1410	ERJ3GEYJ331	M 330 OHM, J, 1/16W	
R1411	ERJ3GEYJ331	M 330 OHM, J, 1/16W	
R1412	ERJ3GEYJ331	M 330 OHM, J, 1/16W	
R1416	ERJ2GEJ220	M 22 OHM, 0.063W	
R1417	ERJ2GEJ220	M 22 OHM, 0.063W	
R1418	ERJ2GEJ220	M 22 OHM, 0.063W	
R1419	ERJ2GEJ473	M 47K OHM, 0.063W	
R1420	ERJ2GEJ473	M 47K OHM, 0.063W	
R1421	ERJ2GEJ473	M 47K OHM, 0.063W	
R1422	ERJ2GEJ104	M 100KOHM, 0.063W	
R1423	ERJ2GEJ104	M 100KOHM, 0.063W	
R1424	ERJ2GEJ104	M 100KOHM, 0.063W	
R1425	ERJ2GEJ220	M 22 OHM, 0.063W	
R1426	ERJ2GEJ220	M 22 OHM, 0.063W	
R1427	ERJ3GEYJ561	M 560 OHM, J, 1/16W	
R1429	ERJ3GEY0R00	M 0 OHM, J, 1/16W	
R1430	ERJ1TYJ221	M 220 OHM, 1W	
R1431	ERJ1TYJ221	M 220 OHM, 1W	
R1432	ERJ2GEJ105	M 1M OHM, 0.063W	LB10VU/E
R1433	ERJ3GEY0R00	M 0 OHM, J, 1/16W	
R1434	ERJ3GEYJ272	M 2.7KOHM, J, 1/16W	
R1435	ERJ3GEYJ272	M 2.7KOHM, J, 1/16W	
R1436	ERJ3GEYJ272	M 2.7KOHM, J, 1/16W	
R1437	ERJ3GEYJ272	M 2.7KOHM, J, 1/16W	
R1438	ERJ3GEYJ272	M 2.7KOHM, J, 1/16W	
R1439	ERJ2GE0R00	M 0 OHM, 0.063W	LB10NTU/E, LB10U/E, LB10VU/E
R1440	ERJ2GE0R00	M 0 OHM, 0.063W	LB10SU/E
R1441	ERJ2GEJ104	M 100KOHM, 0.063W	
R1442	ERJ2GEJ104	M 100KOHM, 0.063W	
R1443	ERJ2GE0R00	M 0 OHM, 0.063W	LB10SU/E
R1444	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1445	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1446	ERJ3GEY0R00	M 0 OHM, 1/16W	
R1447	ERJ2GEJ220	M 22 OHM, 0.063W	
R1801	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1803	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1804	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1805	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1810	ERJ3GEYJ222	M 2.2KOHM, J, 1/16W	LB10NTU/E
R1812	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1814	ERJ3GEYJ560	M 560 OHM, 1/16W	LB10NTU/E
R1815	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1818	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1819	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1820	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1821	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1823	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1824	ERJ3GEY0R00	M 0 OHM, 1/16W	LB10NTU/E
R1829	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1830	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1833	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1834	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1835	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1836	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1837	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1838	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1839	ERJ3GEYJ560	M 560 OHM, 1/16W	LB10NTU/E
R1840	ERJ3GEY0R00	M 0 OHM, 1/16W	LB10NTU/E

Ref. No.	Part No.	Part Name & Description	Remarks
R1844	ERJ3GEYJ101	M 100 OHM, J, 1/16W	D0GB101JA002 (LB10NTU/E)
R1846	ERJ3GEYJ101	M 100 OHM, J, 1/16W	D0GB101JA002 (LB10NTU/E)
R1854	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1860	ERJ3GEYJ105	M 1M OHM, J, 1/16W	LB10NTU/E
R1861	ERJ3GEYJ100	M 100 OHM, 1/16W	LB10NTU/E
R1862	ERJ3GEY0R00	M 0 OHM, 1/16W	LB10NTU/E
R1863	ERJ3GEYJ105	M 1M OHM, J, 1/16W	LB10NTU/E
R1870	ERJ3GEY0R00	M 0 OHM, 1/16W	LB10NTU/E
R1871	ERJ3GEY0R00	M 0 OHM, 1/16W	LB10NTU/E
R1872	ERJ3GEY0R00	M 0 OHM, 1/16W	LB10NTU/E
R1873	ERJ3GEY0R00	M 0 OHM, 1/16W	LB10NTU/E
R1875	ERJ3GEY0R00	M 0 OHM, 1/16W	LB10NTU/E
R1877	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R1878	ERJ3GEYJ101	M 100 OHM, J, 1/16W	D0GB101JA002 (LB10NTU/E)
R1879	ERJ3GEYJ101	M 100 OHM, J, 1/16W	D0GB101JA002 (LB10NTU/E)
R1894	ERJ3GEYJ103	M 10K OHM, J, 1/16W	LB10NTU/E
R2001	ERJ3GEYJ100	M 10 OHM, J, 1/16W	
R2002	ERJ6ENF5601	M 5.6KOHM, 1/10W	
R2003	ERJ6ENF2201	M 2.2KOHM, 1/10W	
R2004	ERJ6ENF6801	M 6.8KOHM, 1/10W	
R2005	ERJ6ENF3302	M 33KOHM, 1/10W	
R2006	ERJ3GEYJ101	M 100 OHM, J, 1/16W	D0GB101JA002
R2007	ERJ3GEYJ101	M 100 OHM, J, 1/16W	D0GB101JA002
R2008	ERJ3GEYJ101	M 100 OHM, J, 1/16W	D0GB101JA002
R2009	ERJ3GEYJ101	M 100 OHM, J, 1/16W	D0GB101JA002
R2010	ERJ3GEYJ101	M 100 OHM, J, 1/16W	D0GB101JA002
R2011	ERJ3GEYJ331	M 330 OHM, J, 1/16W	
R2012	ERJ3GEYJ331	M 330 OHM, J, 1/16W	
R2013	ERJ3GEYJ331	M 330 OHM, J, 1/16W	
R2014	ERJ3GEYJ331	M 330 OHM, J, 1/16W	
R2015	ERJ3GEYJ331	M 330 OHM, J, 1/16W	
R2016	ERJ6GEYJ470	M 47 OHM, J, 1/10W	
R2017	ERJ3GEYJ102	M 1K OHM, J, 1/16W	
R2019	ERJ3GEY0R00	M 0 OHM, J, 1/16W	
R3001	ERJ3GEYJ100	M 10 OHM, J, 1/16W	
R3002	ERJ6ENF5601	M 5.6KOHM, 1/10W	
R3003	ERJ6ENF3302	M 33KOHM, 1/10W	
R3004	ERJ6ENF1002	M 10KOHM, 1/10W	
R3005	ERJ3GEYJ100	M 10 OHM, J, 1/16W	
R3006	ERJ6ENF1002	M 10KOHM, 1/10W	
R3007	ERJ6ENF2201	M 2.2KOHM, 1/10W	
R3008	ERJ6ENF1001	M 1KOHM, 1/10W	
R3009	ERJ6ENF2201	M 2.2KOHM, 1/10W	
R3010	ERJ6ENF1001	M 1KOHM, 1/10W	
R3011	ERJ6ENF2201	M 2.2KOHM, 1/10W	
R3012	ERJ6ENF1003	M 100KOHM, 1/10W	
R9101	ERDS1TJ474	C 4.7KOHM, J, 1/2W	△
R9102	D0A1825JA015	RESISTOR	△
R9601	ERX2SJR47	M 0.47OHM, J, 2W	
R9630	ERJ14YJ3R3	M 3.3 OHM, J, 1/4W	
R9631	ERJ8GEYJ220	M 22 OHM, J, 1/8W	
R9632	ERJ14YJ5R6	M 5.6 OHM, J, 1/4W	
R9633	ERJ8GEYJ100	M 10 OHM, J, 1/8W	
R9634	ERJ8GEYJ120	M 12 OHM, J, 1/8W	
R9636	ERJ14YJ3R3	M 3.3 OHM, J, 1/4W	
R9637	ERJ8GEYJ220	M 22 OHM, J, 1/8W	
R9638	ERJ14YJ5R6	M 5.6 OHM, J, 1/4W	
R9639	ERJ8GEYJ100	M 10 OHM, J, 1/8W	
R9640	ERJ8GEYJ120	M 12 OHM, J, 1/8W	
R9653	D0XGR22KA001	RESISTOR	
[CAPACITORS]			
C1001	EEVHB0J221U	E 220UF, 6.3V	
C1002	ECJ0EB1C103K	C 0.01UF, 16V	
C1003	EEVHB0J221U	E 220UF, 6.3V	
C1004	ECJ0EB1C103K	C 0.01UF, 16V	
C1005	EEVHB0J221U	E 220UF, 6.3V	
C1006	ECJ0EB1C103K	C 0.01UF, 16V	
C1007	ECJ0EF1C104Z	C 0.1UF, 16V	

Ref. No.	Part No.	Part Name & Description	Remarks
C1008	ECJ1XB1H472K	C 4700PF, K, 50V	
C1009	ECJ2XF1C105Z	C 1UF, Z, 16V	
C1010	EEVHB0J330	E 33UF, 6.3V	
C1011	ECJ0EF1C104Z	C 0.1UF, 16V	
C1012	EEVHB0J330	E 33UF, 6.3V	
C1013	EEVHB1A101	E 100UF, 10V	
C1014	ECJ0EF1C104Z	C 0.1UF, 16V	
C1015	ECJ0EF1C104Z	C 0.1UF, 16V	
C1016	ECJ0EB1C103K	C 0.01UF, 16V	
C1017	ECJ0EF1C104Z	C 0.1UF, 16V	
C1018	ECJ0EB1C103K	C 0.01UF, 16V	
C1019	ECJ1XC1H102J	C 1000PF, J, 50V	
C1020	ECUX1H120JCV	C 12PF, 50V	
C1021	ECJ0EF1C104Z	C 0.1UF, 16V	
C1022	ECJ0EB1C103K	C 0.01UF, 16V	
C1023	ECJ0EB1C103K	C 0.01UF, 16V	
C1024	EEVHB1C470	E 47UF, 16V	
C1025	ECUX1H270JCV	C 27PF, 50V	
C1026	ECUX1H120JCV	C 12PF, 50V	
C1027	ECJ1XF1A105Z	C 100UF, 10V	
C1028	ECUX1H270JCV	C 27PF, 50V	
C1029	ECJ0EF1C104Z	C 0.1UF, 16V	
C1032	ECJ0EF1C104Z	C 0.1UF, 16V	
C1033	ECJ1XF1A105Z	C 100UF, 10V	
C1034	EEVHB0J470	E 47UF, 6.3V	
C1035	ECJ1XF1A105Z	C 100UF, 10V	
C1036	ECJ0EB1C103K	C 0.01UF, 16V	
C1037	ECJ0EB1C103K	C 0.01UF, 16V	
C1038	ECJ0EB1C103K	C 0.01UF, 16V	
C1039	ECJ1XF1A105Z	C 100UF, 10V	
C1040	ECJ1XF1A105Z	C 100UF, 10V	
C1041	ECJ1XF1A105Z	C 100UF, 10V	
C1042	ECJ1XF1A105Z	C 100UF, 10V	
C1043	ECJ1XF1A105Z	C 100UF, 10V	
C1044	ECJ1XF1A105Z	C 100UF, 10V	
C1047	ECJ2XF1C225Z	C 2.2UF, Z, 16V	
C1049	ECJ2XF1C225Z	C 2.2UF, Z, 16V	
C1050	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1051	ECJ1XF1A105Z	C 100UF, 10V	
C1052	ECJ1XF1A105Z	C 100UF, 10V	
C1053	ECJ1XF1A105Z	C 100UF, 10V	
C1054	ECJ0EF1C104Z	C 0.1UF, 16V	
C1058	EEVHB0J470	E 47UF, 6.3V	
C1061	ECJ0EF1C104Z	C 0.1UF, 16V	
C1062	EEVHB0J330	E 33UF, 6.3V	
C1072	EEVHB1C470	E 47UF, 16V	
C1075	EEVHB1C100	E 10UF, 16V	
C1076	ECJ3XB0J106M	C 10UF, 6.3V	
C1077	ECJ0EF1C104Z	C 0.1UF, 16V	
C1078	ECJ0EF1C104Z	C 0.1UF, 16V	
C1079	ECJ0EB1C103K	C 0.01UF, 16V	
C1080	ECJ3XB0J106M	C 10UF, 6.3V	
C1081	EEVHB1C100	E 10UF, 16V	
C1082	ECJ0EF1C104Z	C 0.1UF, 16V	
C1083	ECJ0EF1C104Z	C 0.1UF, 16V	
C1084	ECJ2XF1C225Z	C 2.2UF, Z, 16V	
C1085	ECJ0EF1C104Z	C 0.1UF, 16V	
C1086	ECJ0EB1C103K	C 0.01UF, 16V	
C1087	ECJ0EF1C104Z	C 0.1UF, 16V	
C1088	ECJ0EF1C104Z	C 0.1UF, 16V	
C1089	ECJ0EF1C104Z	C 0.1UF, 16V	
C1090	ECJ0EF1C104Z	C 0.1UF, 16V	
C1091	ECJ0EF1C104Z	C 0.1UF, 16V	
C1092	ECJ0EF1C104Z	C 0.1UF, 16V	
C1093	ECJ1XC1H102J	C 1000PF, J, 50V	
C1094	EEVHB0G101	E 100UF, 4V	
C1095	ECJ0EF1C104Z	C 0.1UF, 16V	
C1096	ECJ0EF1C104Z	C 0.1UF, 16V	
C1097	ECJ0EF1C104Z	C 0.1UF, 16V	
C1098	ECJ0EF1C104Z	C 0.1UF, 16V	
C1099	ECJ0EF1C104Z	C 0.1UF, 16V	
C1100	ECJ1XC1H151J	C 150PF, 50V	
C1101	EEVHB1C100	E 10UF, 16V	

Ref. No.	Part No.	Part Name & Description	Remarks
C1102	ECJ0EF1C104Z	C 0.1UF, 16V	
C1103	EEVHB0J101	E 100UF, 6.3V	EEVHB0J101P
C1104	EEVHB1C470	E 47UF, 16V	
C1107	ECJ0EF1C104Z	C 0.1UF, 16V	
C1108	ECJ0EF1C104Z	C 0.1UF, 16V	
C1109	ECUV1C823KBV	C 0.082PF, 16V	ECJ1VB1C823K
C1110	ECUX1H822KBV	C 8200PF, 50V	ECJ1XB1H822K
C1111	ECJ2XF1C105Z	C 1UF, Z, 16V	
C1113	ECJ0EB1C103K	C 0.01UF, 16V	
C1114	ECJ0EF1C104Z	C 0.1UF, 16V	
C1116	ECJ1XB1H472K	C 4700PF, K, 50V	
C1117	ECJ0EB1C103K	C 0.01UF, 16V	
C1118	ECJ3XF1C475Z	C 4.7UF, Z, 16V	
C1119	ECJ3XF1C475Z	C 4.7UF, Z, 16V	
C1120	ECJ3XF1C475Z	C 4.7UF, Z, 16V	
C1121	ECJ0EF1C104Z	C 0.1UF, 16V	
C1122	ECJ1XC1H150J	C 150PF, 50V	
C1123	ECJ0EF1C104Z	C 0.1UF, 16V	
C1124	ECJ1XC1H221J	C 220PF, 50V	
C1125	ECJ0EF1C104Z	C 0.1UF, 16V	
C1126	ECJ1XC1H150J	C 150PF, 50V	
C1127	ECJ0EF1C104Z	C 0.1UF, 16V	
C1128	EEFUD0J101R	CAPACITOR	
C1129	ECJ2XC1H391J	C 390PF, J, 50V	
C1130	EEVHB1C100	E 10UF, 16V	
C1131	ECJ0EF1C104Z	C 0.1UF, 16V	
C1132	ECJ0EF1C104Z	C 0.1UF, 16V	
C1133	ECJ0EF1C104Z	C 0.1UF, 16V	
C1134	ECJ1XC1H181J	C 180PF, J, 50V	
C1135	ECJ0EF1C104Z	C 0.1UF, 16V	
C1136	ECJ1XF1A105Z	C 100UF, 10V	
C1137	EEVHB0G101	E 100UF, 4V	
C1138	ECJ0EF1C104Z	C 0.1UF, 16V	
C1139	ECJ0EF1C104Z	C 0.1UF, 16V	
C1140	ECJ0EF1C104Z	C 0.1UF, 16V	
C1141	ECJ2XF1C225Z	C 2.2UF, Z, 16V	
C1142	EEVHB0J101	E 100UF, 6.3V	EEVHB0J101P
C1143	EEVHB1C470	E 47UF, 16V	
C1145	ECJ0EF1C104Z	C 0.1UF, 16V	
C1146	EEVHB1C470	E 47UF, 16V	
C1147	ECJ3XF1C475Z	C 4.7UF, Z, 16V	
C1149	ECJ0EF1C104Z	C 0.1UF, 16V	
C1150	ECJ0EF1C104Z	C 0.1UF, 16V	
C1152	ECJ0EF1C104Z	C 0.1UF, 16V	
C1154	ECJ0EF1C104Z	C 0.1UF, 16V	
C1155	ECJ1XF1C104Z	C 0.1UF, Z, 16V	
C1156	ECJ1XF1A105Z	C 100UF, 10V	
C1157	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1158	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1159	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1160	EEVHB0J470	E 47UF, 6.3V	LB10NTU/E
C1161	ECJ2XF1C105Z	C 1UF, Z, 16V	
C1162	ECJ0EF1C104Z	C 0.1UF, 16V	
C1163	ECJ0EF1C104Z	C 0.1UF, 16V	
C1164	ECJ0EF1C104Z	C 0.1UF, 16V	
C1165	ECJ0EF1C104Z	C 0.1UF, 16V	
C1166	ECJ0EF1C104Z	C 0.1UF, 16V	
C1167	ECJ0EF1C104Z	C 0.1UF, 16V	
C1168	ECJ0EF1C104Z	C 0.1UF, 16V	
C1169	ECJ0EF1C104Z	C 0.1UF, 16V	
C1170	ECJ0EF1C104Z	C 0.1UF, 16V	
C1171	ECJ0EF1C104Z	C 0.1UF, 16V	
C1172	ECJ0EF1C104Z	C 0.1UF, 16V	
C1173	ECJ0EF1C104Z	C 0.1UF, 16V	
C1174	ECJ0EF1C104Z	C 0.1UF, 16V	
C1175	ECJ0EF1C104Z	C 0.1UF, 16V	
C1176	ECJ0EF1C104Z	C 0.1UF, 16V	
C1177	ECJ0EF1C104Z	C 0.1UF, 16V	
C1178	ECJ0EF1C104Z	C 0.1UF, 16V	
C1179	ECJ0EF1C104Z	C 0.1UF, 16V	
C1180	ECJ0EF1C104Z	C 0.1UF, 16V	
C1181	ECJ0EF1C104Z	C 0.1UF, 16V	
C1182	ECJ0EF1C104Z	C 0.1UF, 16V	

Ref. No.	Part No.	Part Name & Description	Remarks
C1183	ECJ0EF1C104Z	C 0.1UF, 16V	
C1184	ECJ0EF1C104Z	C 0.1UF, 16V	
C1185	ECJ0EF1C104Z	C 0.1UF, 16V	
C1186	ECJ0EF1C104Z	C 0.1UF, 16V	
C1187	EEVHB0J470	E 47UF, 6.3V	
C1188	ECJ0EF1C104Z	C 0.1UF, 16V	
C1189	ECJ0EF1C104Z	C 0.1UF, 16V	
C1190	ECJ0EF1C104Z	C 0.1UF, 16V	
C1191	ECJ0EF1C104Z	C 0.1UF, 16V	
C1192	ECJ0EF1C104Z	C 0.1UF, 16V	
C1193	ECJ0EF1C104Z	C 0.1UF, 16V	
C1194	ECJ0EF1C104Z	C 0.1UF, 16V	
C1195	ECJ0EF1C104Z	C 0.1UF, 16V	
C1196	ECJ0EF1C104Z	C 0.1UF, 16V	
C1197	ECJ0EF1C104Z	C 0.1UF, 16V	
C1198	ECJ0EF1C104Z	C 0.1UF, 16V	
C1199	EEVHB0J470	E 47UF, 6.3V	
C1200	ECJ1XF1A105Z	C 100UF, 10V	
C1201	ECJ1XF1A105Z	C 100UF, 10V	
C1202	ECJ0EF1C104Z	C 0.1UF, 16V	
C1203	ECJ0EF1C104Z	C 0.1UF, 16V	
C1204	ECJ0EF1C104Z	C 0.1UF, 16V	
C1206	ECJ0EF1C104Z	C 0.1UF, 16V	
C1207	ECJ0EF1C104Z	C 0.1UF, 16V	
C1208	ECJ0EF1C104Z	C 0.1UF, 16V	
C1209	ECJ0EF1C104Z	C 0.1UF, 16V	
C1210	ECJ1XF1H333Z	C 0.033UF, 50V	
C1212	ECJ0EF1C104Z	C 0.1UF, 16V	
C1213	ECJ0EF1C104Z	C 0.1UF, 16V	
C1214	ECJ0EF1C104Z	C 0.1UF, 16V	
C1215	ECJ0EF1C104Z	C 0.1UF, 16V	
C1216	ECJ0EF1C104Z	C 0.1UF, 16V	
C1217	ECJ1XC1H471J	C 470PF, J, 50V	
C1218	ECJ0EF1C104Z	C 0.1UF, 16V	
C1219	ECJ1XC1H100C	C 10PF, 50V	
C1220	ECJ0EF1C104Z	C 0.1UF, 16V	
C1221	ECJ1XC1H100C	C 10PF, 50V	
C1222	ECJ0EF1C104Z	C 0.1UF, 16V	
C1223	ECJ0EF1C104Z	C 0.1UF, 16V	
C1224	EEVHB0J470	E 47UF, 6.3V	
C1225	ECJ0EF1C104Z	C 0.1UF, 16V	
C1228	EEVHB0J330	E 33UF, 6.3V	
C1229	ECJ0EF1C104Z	C 0.1UF, 16V	
C1230	EEVHB0G101	E 100UF, 4V	
C1232	ECJ0EF1C104Z	C 0.1UF, 16V	
C1233	ECJ0EF1C104Z	C 0.1UF, 16V	
C1234	ECJ0EF1C104Z	C 0.1UF, 16V	
C1235	ECJ0EF1C104Z	C 0.1UF, 16V	
C1236	ECJ0EF1C104Z	C 0.1UF, 16V	
C1237	ECJ0EF1C104Z	C 0.1UF, 16V	
C1238	ECJ0EF1C104Z	C 0.1UF, 16V	
C1239	ECJ0EF1C104Z	C 0.1UF, 16V	
C1240	ECJ0EF1C104Z	C 0.1UF, 16V	
C1241	ECJ0EF1C104Z	C 0.1UF, 16V	
C1242	ECJ0EF1C104Z	C 0.1UF, 16V	
C1243	ECJ0EF1C104Z	C 0.1UF, 16V	
C1244	ECJ0EF1C104Z	C 0.1UF, 16V	
C1245	ECJ0EF1C104Z	C 0.1UF, 16V	
C1246	ECJ0EF1C104Z	C 0.1UF, 16V	
C1247	ECJ0EF1C104Z	C 0.1UF, 16V	
C1248	ECJ0EF1C104Z	C 0.1UF, 16V	
C1249	ECJ0EF1C104Z	C 0.1UF, 16V	
C1250	ECJ0EF1C104Z	C 0.1UF, 16V	
C1251	ECJ0EF1C104Z	C 0.1UF, 16V	
C1252	ECJ0EF1C104Z	C 0.1UF, 16V	
C1253	ECJ0EF1C104Z	C 0.1UF, 16V	
C1254	ECJ0EF1C104Z	C 0.1UF, 16V	
C1255	ECJ0EF1C104Z	C 0.1UF, 16V	
C1256	ECJ0EF1C104Z	C 0.1UF, 16V	
C1257	ECJ0EF1C104Z	C 0.1UF, 16V	
C1258	ECJ0EF1C104Z	C 0.1UF, 16V	
C1259	ECJ0EF1C104Z	C 0.1UF, 16V	
C1260	ECJ0EF1C104Z	C 0.1UF, 16V	

Ref. No.	Part No.	Part Name & Description	Remarks
C1261	ECJ0EF1C104Z	C 0.1UF, 16V	
C1262	ECJ0EF1C104Z	C 0.1UF, 16V	
C1263	ECJ0EF1C104Z	C 0.1UF, 16V	
C1264	ECJ0EF1C104Z	C 0.1UF, 16V	
C1265	ECJ0EF1C104Z	C 0.1UF, 16V	
C1266	ECJ0EF1C104Z	C 0.1UF, 16V	
C1267	EEVHB1E4R7	E 4.7UF, 25V	
C1268	EEVHB1E4R7	E 4.7UF, 25V	
C1269	EEVHB1A221	E 220UF, 10V	
C1270	EEVHB0J101	E 100UF, 6.3V	EEVHB0J101P
C1271	EEVHB0J101	E 100UF, 6.3V	EEVHB0J101P
C1272	EEVHB0J470	E 47UF, 6.3V	
C1273	ECJ0EF1C104Z	C 0.1UF, 16V	
C1274	ECJ0EF1C104Z	C 0.1UF, 16V	
C1275	ECJ0EF1C104Z	C 0.1UF, 16V	
C1276	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1277	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1278	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1279	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1280	EEVHB1E330	E 33UF, 25V	
C1281	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1282	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1283	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1284	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1285	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1286	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1287	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1288	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1289	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1290	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1291	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1292	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1293	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1294	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1295	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1296	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1297	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1298	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1299	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1300	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1301	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1304	EEVHB1E330	E 33UF, 25V	
C1306	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1307	ECJ0EF1C104Z	C 0.1UF, 16V	
C1308	ECJ0EF1C104Z	C 0.1UF, 16V	
C1309	ECJ0EF1C104Z	C 0.1UF, 16V	
C1310	ECJ0EF1C104Z	C 0.1UF, 16V	
C1311	ECJ0EF1C104Z	C 0.1UF, 16V	
C1312	ECJ0EF1C104Z	C 0.1UF, 16V	
C1313	ECJ0EF1C104Z	C 0.1UF, 16V	
C1314	ECJ0EF1C104Z	C 0.1UF, 16V	
C1315	ECJ0EF1C104Z	C 0.1UF, 16V	
C1316	ECJ0EF1C104Z	C 0.1UF, 16V	
C1317	ECJ0EF1C104Z	C 0.1UF, 16V	
C1318	ECJ0EF1C104Z	C 0.1UF, 16V	
C1319	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1320	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1321	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1322	EEVHB1E4R7	E 4.7UF, 25V	
C1323	ECJ0EF1C104Z	C 0.1UF, 16V	
C1324	ECJ0EF1C104Z	C 0.1UF, 16V	
C1325	ECJ0EF1C104Z	C 0.1UF, 16V	
C1326	ECJ0EF1C104Z	C 0.1UF, 16V	
C1327	ECJ0EF1C104Z	C 0.1UF, 16V	
C1328	ECJ0EF1C104Z	C 0.1UF, 16V	
C1329	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1330	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1331	ECJ1XF1E104Z	C 0.1UF, Z, 25V	
C1332	F2G1E3300022	CAPACITOR	
C1333	EEVHB1E330	E 33UF, 25V	
C1334	EEVHB1E330	E 33UF, 25V	
C1335	EEVHB1A330	E 33UF, 10V	
C1336	F2G1A3300022	CAPACITOR	

Ref. No.	Part No.	Part Name & Description	Remarks
C1337	EEVHB1A330	E 33UF, 10V	
C1341	ECJ2XF1C105Z	C 1UF, Z, 16V	
C1342	ECJ2XF1C105Z	C 1UF, Z, 16V	
C1343	ECJ2XF1C105Z	C 1UF, Z, 16V	
C1344	ECJ0EF1C104Z	C 0.1UF, 16V	LB10NTU/E
C1345	ECJ0EF1C104Z	C 0.1UF, 16V	
C1346	ECJ0EF1C104Z	C 0.1UF, 16V	
C1347	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1351	ECJ1XF1C104Z	C 0.1UF, Z, 16V (WL-PCB)	LB10NTU/E
C1353	F4D272750002	CAPACITOR	
C1354	ECJ1XF1C104Z	C 0.1UF, Z, 16V (WL-PCB)	LB10NTU/E
C1354	F4D272750002	CAPACITOR	
C1355	F4D272750002	CAPACITOR	
C1356	ECJ1XF1C104Z	C 0.1UF, Z, 16V (WL-PCB)	LB10NTU/E
C1356	F4D272750002	CAPACITOR	
C1357	F4D272750002	CAPACITOR	
C1360	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1539	EEVHB1E330	E 33UF, 25V	
C1801	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1805	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1806	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1807	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1808	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1813	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1814	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1815	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1816	F2G0J4700024	CAPACITOR	LB10NTU/E
C1817	F2G0J4700024	CAPACITOR	LB10NTU/E
C1818	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1819	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1820	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1824	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1825	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1830	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C1837	F2G0J4700024	CAPACITOR	LB10NTU/E
C1843	ECJ1XF1C104Z	C 0.1UF, Z, 16V	LB10NTU/E
C2001	EEVHB0J470	E 47UF, 6.3V	
C2002	ECJ1XF1C104Z	C 0.1UF, Z, 16V	
C2003	ECJ0EF1C104Z	C 0.1UF, 16V	
C2004	EEVHB0J470	E 47UF, 6.3V	
C3001	EEVHB0J330	E 33UF, 6.3V	
C3002	ECJ1XF1C104Z	C 0.1UF, Z, 16V	
C3003	ECJ1XF1C104Z	C 0.1UF, Z, 16V	
C9101	ECQU2A334MLA	CAPACITOR	△
C9102	F1BAH1020016	CAPACITOR	△
C9103	F1BAH1020016	CAPACITOR	△
C9603	F0CZZ4740002	CAPACITOR	
C9610	F0C2E1050002	CAPACITOR	
C9617	F0C3C4720003	CAPACITOR	
C9618	F0C2J1540004	CAPACITOR	
C9619	F0C2J1540004	CAPACITOR	
[OTHERS]			
A1	K1MN30B00115	30P CONNECTOR	
A2	K1MN30B00114	30P CONNECTOR	
A3	K1MN30B00115	30P CONNECTOR	
A4	K1KA05B00153	5P CONNECTOR	
A6	K1KA12B00079	12P CONNECTOR	
A8	TJSF21710	10P CONNECTOR	K1MN10B00060
A9	K1KB05A00027	5P CONNECTOR	
A10	K1KA02B00051	2P CONNECTOR	
A13	K1KB21A00007	21P CONNECTOR	LB10NTU/E
A14	K1KB21A00007	21P CONNECTOR	LB10NTU/E
A15	TJS6A8780	3P CONNECTOR	K1KA03B00006
A16	K1KA03B00098	3P CONNECTOR	
A17	TJS6A8780	3P CONNECTOR	K1KA03B00006
A18	K1KA03B00098	3P CONNECTOR	
A19	K1KA04B00007	4P CONNECTOR	
S1	K1MN10B00116	10P CONNECTOR	
S2	K1KA05B00150	5P CONNECTOR	

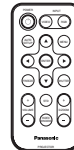


Ref. No.	Part No.	Part Name & Description	Remarks
WL4	K1KA21A00006	21P CONNECTOR	LB10NTU/E
WL5	K1KA21A00006	21P CONNECTOR	LB10NTU/E
CF2001	D4CC1103A037	THERMISTOR	
DL1001	J0HABC000011	FILTER	
DL1002	J0HABC000011	FILTER	
DL1003	J0HABC000011	FILTER	
F9101-1	EYF52BCY	FUSE HOLDER	
F9101-2	EYF52BCY	FUSE HOLDER	
JK1001	K1CB205B0003	S-VIDEO/VIDEO IN TERMINAL	
JK1002	K2EZ8B000002	RS232C I/F TERMINAL	
JK1004	K1FB115B00098	RGB IN TERMINAL	
JK1005	K1FB115B00079	RGB OUT TERMINAL	
JK1009	K2HA202B00025	AUDIO IN TERMINAL	
JK1802	K1NA50E000027	PC CARD CONNECTOR	LB10NTU/E
JK9101	K2AH3B0000020	AC INLET	△
RM2001	B3RAD0000058	REMOTE CONTROL RECEIVER	
S9602	A9BZ00000010	SPARK GAP	
SW2001	EVQPLHA15	SWITCH	
SW2002	EVQPLHA15	SWITCH	
SW2003	EVQPLHA15	SWITCH	
SW3001	EVQPLHA15	SWITCH	
SW3002	EVQWHA50K	SWITCH	
SW9601	T115AR3U3	SWITCH	△
T9604	G4F2A0000001	TRANS	△
X1002	H0J270500045	CRYSTAL	
X1003	H0J983400016	CRYSTAL	
X1006	H1A6505B0006	CRYSTAL	LB10NTU/E, LB10U/E, LB10VU/E
	H1A4405B0009	CRYSTAL	LB10SU/E
X1801	H1A6005B0011	CRYSTAL	LB10NTU/E
ZA9101	TJC6137	EARTH LUG	
RTL	TXANP03VJW5	CIRCUIT BOARD K	
RTL	TNPA3143	CIRCUIT BOARD WL	LB10NTU/E
RTL	TXANP01PVMZ	CIRCUIT BOARD A	LB10NTU/E
	TXANP01PVNZ	CIRCUIT BOARD A	LB10U/E
	TXANP01PVPZ	CIRCUIT BOARD A	LB10VU/E
	TXANP01PXAZ	CIRCUIT BOARD A	LB10SU/E
RTL	TNPA3145	CIRCUIT BOARD S2	
RTL	TNPA3144	CIRCUIT BOARD S1	
	TXANP02VJW5	POWER UNIT ASSY	
	TXANP05VJW5	BALLAST UNIT ASSY	

# Operating Instructions

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Model No. **PT-LB10NTU**  
**PT-LB10U**  
**PT-LB10VU**  
**PT-LB10SU**



Before operating this product, please read the instructions carefully and save this manual for future use.

# Dear Panasonic Customer:

This instruction booklet provides all the necessary operating information that you might require. We hope it will help you to get the most out of your new product, and that you will be pleased with your Panasonic LCD projector. The serial number of your product may be found on its bottom. You should note it in the space provided below and retain this booklet in case service is required.

Model number: **PT-LB10NTU / PT-LB10U / PT-LB10VU / PT-LB10SU**

Serial number: \_\_\_\_\_

## IMPORTANT SAFETY NOTICE

**WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.**

**Power Supply:** This LCD Projector is designed to operate on 100 V – 240 V, 50 Hz/60 Hz AC, house current only.

**CAUTION:** The AC power cord which is supplied with the projector as an accessory can only be used for power supplies up to 125 V, 7 A. If you need to use higher voltages or currents than this, you will need to obtain a separate 250 V power cord. If you use the accessory cord in such situations, fire may result.



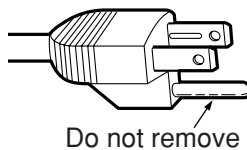
The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

**CAUTION:**

This equipment is equipped with a three-pin grounding-type power plug. Do not remove the grounding pin on the power plug. This plug will only fit a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician. Do not defeat the purpose of the grounding plug.

**WARNING:**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**FCC CAUTION:** To assure continued compliance, use only shielded interface cables when connecting to computers or peripheral devices.

Any unauthorized changes or modifications to this equipment will void the users authority to operate.

If you use serial port to connect PC for external control of projector, you must use optional RS-232C serial interface cable with ferrite core. Any unauthorized changes or modifications to this equipment will void the user's authority to operate.

**WARNING:**

- Not for use in a computer room as defined in the Standard for the Protection of Electronic Computer/Data Processing Equipment, ANSI/NFPA 75.
- For permanently connected equipment, a readily accessible disconnect device shall be incorporated in the building installation wiring;
- For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.

**Declaration of Conformity**

Model Number: PT-LB10NTU/PT-LB10U/PT-LB10VU/PT-LB10SU

Trade Name: **Panasonic**

Responsible party: Matsushita Electric Corporation of America.

Address: One Panasonic Way Secaucus New Jersey 07094

Telephone number: 1-800-528-8601 or 1-800-222-0741

Email: pbtsservice@panasonic.com

This device complies with Part 15 of the FCC Rules, Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

# Contents

## Preparation

### IMPORTANT SAFETY NOTICE ...2

#### Precautions with regard to safety .....6

#### Accessories .....10

#### Before use .....11

#### Location and function of each part .....13

#### Inserting the wireless card .....18

## Getting started

### Setting-up .....19

Projection methods, Projector position, Projection distances

### Connections .....21

Connecting to computer, Connecting to video equipment

### Preparation for the remote control unit .....23

## Basic operation

### Turning on the power .....24

### Turning off the power .....26

## Useful functions

### Correcting keystone distortion and automatic positioning .....28

### Turning off the picture and sound momentarily .....29

### Pausing a picture .....29

### Enlarging the picture .....30

### Adjusting the volume .....30

### Displaying two screens .....31

## Adjustments and settings

### On-screen menus .....32

Menu screens, Menu operation guide, Returning a setting to the factory default

### Correcting keystone distortion...36

### Adjusting the picture .....37

PICTURE MODE, CONTRAST, BRIGHT, COLOR, TINT, SHARPNESS, COLOR TEMP., White balance R/G/B, AI, TV-SYSTEM, STILL MODE,

SIGNAL MODE, Projecting sRGB-compatible pictures

### Adjusting the position .....40

POSITION, DOT CLOCK, CLOCK PHASE, ASPECT, RESIZING, FRAME LOCK

### Changing the display language...43

### Option settings .....43

OSD, AUTO SEARCH, AUTO SIGNAL, AUTO KEYSTN, RGB/YPbPr, VGA60/480p, SXGA MODE, Noise Reduction (NR), BLACKBOARD, BACK COLOR, FRONT/REAR, DESK/CEILING, FAN CONTROL, LAMP POWER, LAMP RUNTIME, FUNC 1, CONTROL KEY, AUTO POW.OFF, POWER MEMORY

### Setting up the security

function .....47  
INPUT/AMEND PASSWD, TEXT DISPLAY/CHANGE

### Network setup .....49

## Care and maintenance

### When the TEMP indicator and the LAMP indicator are illuminated .....50

### Cleaning and replacing the air filter .....52

### Replacing the lamp unit .....53

### Before calling for service .....56

### Cleaning and maintenance .....57

## Others

### Specifications .....58

### Appendix .....60

List of compatible signals, Pin assignments, Projection dimensions calculation methods, Using the SERIAL connector

### Dimensions .....64

### Trademark acknowledgements...64

### NOTES IMPORTANTES

### CONCERNANT LA SECURITE...65

### Précautions de sécurité .....66

### Avant l'utilisation .....70

### Remplacement du bloc de lampe...72

# Precautions with regard to safety

## WARNING

**If you notice smoke, strange smells or noise coming from the projector, disconnect the power cord plug from the wall outlet.**

- Do not continue to use the projector in such cases, otherwise fire or electric shocks could result.
- Check that no more smoke is coming out, and then contact an Authorized Service Center for repairs.
- Do not attempt to repair the projector yourself, as this can be dangerous.

**Do not install this projector in a place which is not strong enough to take the full weight of the projector.**

- If the installation location is not strong enough, it may fall down or tip over, and severe injury or damage could result.

**Installation work (such as ceiling suspension) should only be carried out by a qualified technician.**

- If installation is not carried out correctly, there is the danger that injury or electric shocks may occur.

**If foreign objects or water get inside the projector, or if the projector is dropped or the cabinet is broken, disconnect the power cord from the wall outlet.**

- Continued use of the projector in this condition may result in fire or electric shocks.
- Contact an Authorized Service Center for repairs.

**Do not overload the wall outlet.**

- If the power supply is overloaded (for example, by using too many adapters), overheating may occur and fire may result.

**Do not remove the cover or modify it in any way.**

- High voltages can cause fire or electric shocks.
- For any inspection, adjustment and repair work, please contact an Authorized Service Center.

**Clean the power cord plug regularly to prevent it from becoming covered in dust.**

- If dust builds up on the power cord plug, the resulting humidity can damage the insulation, which could result in fire. Pull the power cord plug out from the wall outlet and wipe it with a dry cloth.
- If not using the projector for an extended period of time, pull the power cord plug out from the wall outlet.

**Do not do anything that might damage the power cord or the power cord plug.**

- Do not damage the power cord, make any modifications to it, place it near any hot objects, bend it excessively, twist it, pull it, place heavy objects on top of it or wrap it into a bundle.

- If the power cord is used while damaged, electric shocks, short-circuits or fire may result.
- Ask an Authorized Service Center to carry out any repairs to the power cord that might be necessary.

**Do not handle the power cord plug with wet hands.**

- Failure to observe this may result in electric shocks.

**Insert the power cord plug securely into the wall outlet.**

- If the plug is not inserted correctly, electric shocks or overheating could result.
- Do not use plugs which are damaged or wall outlet which are coming loose from the wall.

**Do not place the projector on top of surfaces which are unstable.**

- If the projector is placed on top of a surface which is sloped or unstable, it may fall down or tip over, and injury or damage could result.

**Do not place the projector into water or let it become wet.**

- Failure to observe this may result in fire or electric shocks.

**Do not place the projector on soft materials such as carpets or sponge mats.**

- Doing so may cause the projector to overheat, which can cause burns, fire or damage to the projector.

**Do not place liquid containers on top of the projector.**

- If water spills onto the projector or gets inside it, fire or electric shocks could result.
- If any water gets inside the projector, contact an Authorized Service Center.

**Do not insert any foreign objects into the projector.**

- Do not insert any metal objects or flammable objects into the projector or drop them onto the projector, as doing so can result in fire or electric shocks.

**Keep the batteries out of the reach of infants.**

- If the batteries are swallowed, death by suffocation may result. If you believe that the batteries may have been swallowed, seek medical advice immediately.

**Do not allow the + and - terminals of the batteries to come into contact with metallic objects such as necklaces or hairpins.**

- Failure to observe this may cause the batteries to leak, overheat, explode or catch fire.
- Store the batteries in a plastic bag and keep them away from metallic objects.

**During a thunderstorm, do not touch the projector or the cable.**

- Electric shocks can result.

**Do not use the projector in a bath or shower.**

- Fire or electric shocks can result.



**Do not look into the lens while the projector is being used.**

- Strong light is emitted from the projector's lens. If you look directly into this light, it can hurt and damage your eyes.
- Be especially careful not to let young children look into the lens. In addition, disconnect the power cord when you are away from the projector.

**Do not place your hands or other objects close to the air outlet port.**

- Heated air comes out of the air outlet port. Do not place your hands or face, or objects which cannot withstand heat close to this port, otherwise burns or damage could result.

**Replacement of the lamp unit should only be carried out by a qualified technician.**

- The lamp unit has high internal pressure. If improperly handled, explosion might result.
- The lamp unit can easily become damaged if struck against hard objects or dropped, and injury or malfunctions may result.

**When replacing the lamp, allow it to cool for at least one hour before handling it.**

- The lamp cover gets very hot, and contact with it can cause burns.

**Before replacing the lamp, be sure to disconnect the power cord from the wall outlet.**

- Electric shocks or explosions can result if this is not done.

## **Caution**

**Do not cover the air inlet port or the air outlet port.**

- Doing so may cause the projector to overheat, which can cause fire or damage to the projector.
- Do not place the projector in narrow, badly ventilated places such as closets or bookshelves.
- Do not place the projector on cloth or papers, as these materials could be drawn into the air inlet port.

**Do not set up the projector in humid or dusty places or in places where the projector may come into contact with smoke or steam.**

- Using the projector under such conditions may result in fire or electric shocks.

**When disconnecting the power cord, hold the plug, not the lead.**

- If the power cord itself is pulled, the lead will become damaged, and fire, short-circuits or serious electric shocks may result.

**Always disconnect all cables before moving the projector.**

- Moving the projector with cables still attached can damage the cables, which could cause fire or electric shocks to occur.

**Do not place any heavy objects on top of the projector.**

- Failure to observe this may cause the projector to become unbalanced and fall, which could result in damage or injury.

**Do not short-circuit, heat or disassemble the batteries or place them into water or fire.**

- Failure to observe this may cause the batteries to overheat, leak, explode or catch fire, and burns or other injury may result.

**When inserting the batteries, make sure the polarities (+ and -) are correct.**

- If the batteries are inserted incorrectly, they may explode or leak, and fire, injury or contamination of the battery compartment and surrounding area may result.

**Use only the specified batteries.**

- If incorrect batteries are used, they may explode or leak, and fire, injury or contamination of the battery compartment and surrounding area may result.

**Insulate the battery using tape or similar before disposal.**

- If the battery comes into contact with metallic objects or other batteries, it may catch fire or explode.

**Do not put your weight on this projector.**

- You could fall or the projector could break, and injury may result.
- Be especially careful not to let young children stand or sit on the projector.

**If not using the projector for an extended period of time, disconnect the power cord plug from the wall outlet.**

- If dust builds up on the mains plug, the resulting humidity may damage the insulation, which could result in fire.
- This projector continues to draw approximately 6 W of power even when the power is turned off.

**Disconnect the power cord plug from the wall outlet as a safety precaution before carrying out any cleaning.**

- Electric shocks can result if this is not done.

**Do not install the accessory wireless card to any device other than the card slot of the projector. (PT-LB10NTU only)**

- If this is not observed, damage to the device may result.

**Ask an Authorized Service Center to clean inside the projector at least once a year.**

- If dust is left to build up inside the projector without being cleaned out, it can result in fire or problems with operation.
- It is a good idea to clean the inside of the projector before the season for humid weather arrives. Ask your nearest Authorized Service Center to clean the projector when required. Please discuss with the Authorized Service Center regarding cleaning costs.



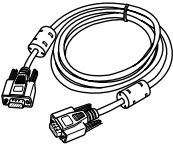
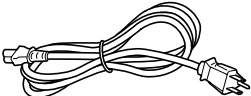
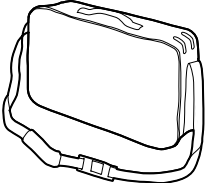
**We are constantly making efforts to preserve and maintain a clean environment. Please take non repairable units back to your dealer or a recycling company.**

**NOTICE:**

- This product has a High Intensity Discharge (HID) lamp that contains a small amount of mercury. It also contains lead in some components. Disposal of these materials may be regulated in your community due to environmental considerations. For disposal or recycling information please contact your local authorities, or the Electronics Industries Alliance: <<http://www.eiae.org>>

## Accessories

Check that all of the accessories shown below have been included with your projector.

Card remote control unit (TNQE239 x1) 	Lithium battery for remote control unit (CR2025 x1) 	RGB signal cable [1.8 m (5'10"), K1HA15DA0002 x1] 
	Power cord (K2CG3DR00005 x 1) 	Carrying bag (TPEP013 x 1) 

### PT-LB10NTU only

CD-ROM (TQBH9005 x1) 	Wireless Card (N5HBD0000028 x1) 	Hexagon wrench (TKLA0701 x1) 
--	---	--

# Before use

## Caution when moving the projector

**Be sure to attach the lens cover before moving the projector.**

The projection lens is extremely susceptible to vibration and shocks. When moving the projector, use the accessory carrying bag. When placing the projector inside the carrying bag, position it so that the lens is facing upward. Do not put anything else in the bag other than the projector and the cables.

## Cautions regarding setting-up

**Avoid setting up in places which are subject to vibration or shocks.**

The internal parts can be damaged, which may cause malfunctions or accidents.

**Do not set up the projector near high-voltage power lines or near motors.**

The projector may be subject to electromagnetic interference.

**If installing the projector to the ceiling, ask a qualified technician to carry out all installation work.**

You will need to purchase the separate installation kit (Model No.ET-PKC80). Furthermore, all installation work should only be carried out by a qualified technician.

**If using this projector at high elevations (above 1 400 m), set the “FAN CONTROL” to “HIGH”. (Refer to page 45.)**

Failure to observe this may result in malfunctions.

## **Notes on use**

### **In order to get the best picture quality**

Draw curtains or blinds over any windows and turn off any fluorescent lights near the screen to prevent outside light or light from indoor lamps from shining onto the screen.

### **Do not touch the surfaces of the lens with your bare hands.**

If the surface of the lens becomes dirty from fingerprints or anything else, this will be magnified and projected onto the screen. Moreover, when not using the projector, retract the lens and then cover it with the lens cover.

### **Screen**

Do not apply any volatile substances which may cause discoloration to the screen, and do not let it become dirty or damaged.

### **Lamp**

The lamp may need to be replaced earlier due to variables such as individual lamp characteristics, usage conditions and the installation environment, especially when the projector is subjected to continuous use for more than 10 hours or the power is frequently turned on and off.

### **Liquid crystal panel**

The liquid crystal panel of the projector is built with very high precision technology to provide fine picture details. Occasionally, a few non-active pixels may appear on the screen as fixed points of blue, green or red. Please note that this does not affect the performance of your LCD.

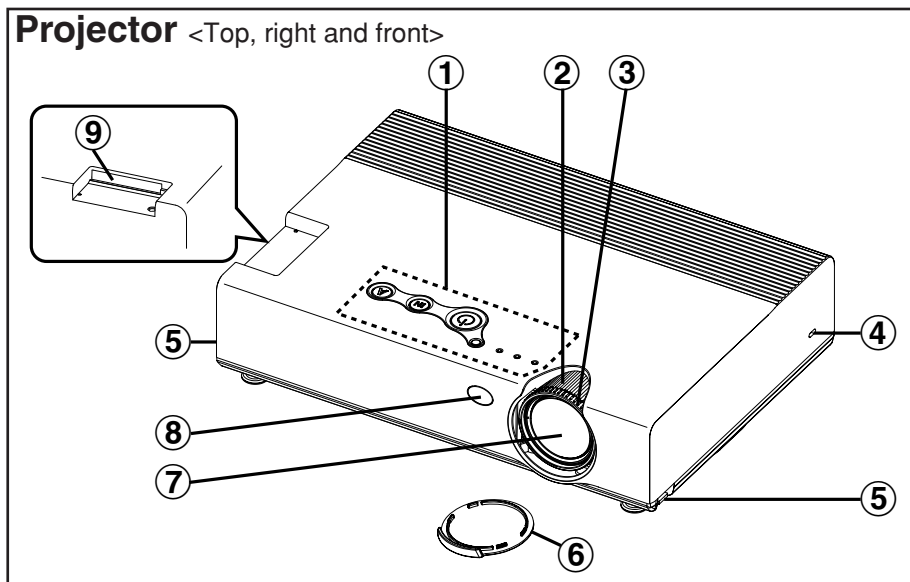
### **Wireless card (PT-LB10NTU only)**

Static electricity from the human body can damage the wireless card. To prevent this, touch a nearby metallic object such as an aluminium sash or a door knob to dissipate the static charge from your body.

### **Wireless card slot (PT-LB10NTU only)**

Make sure that there are no foreign objects inside the slot when inserting the wireless card. Failure to observe this may damage the card and the slot.

# Location and function of each part



① **Projector control panel** (page 16)

② **Zoom ring** (page 25)

③ **Focus ring** (page 25)

④ **Security lock**

This can be used to connect a commercially-available theft-prevention cable (manufactured by Kensington). This security lock is compatible with the Microsaver Security System from Kensington.

⑤ **Leg adjuster buttons (L/R)** (page 25)

These buttons are used to unlock the front adjustable legs. Press to adjust the angle of tilt of the projector.

⑥ **Lens cover**

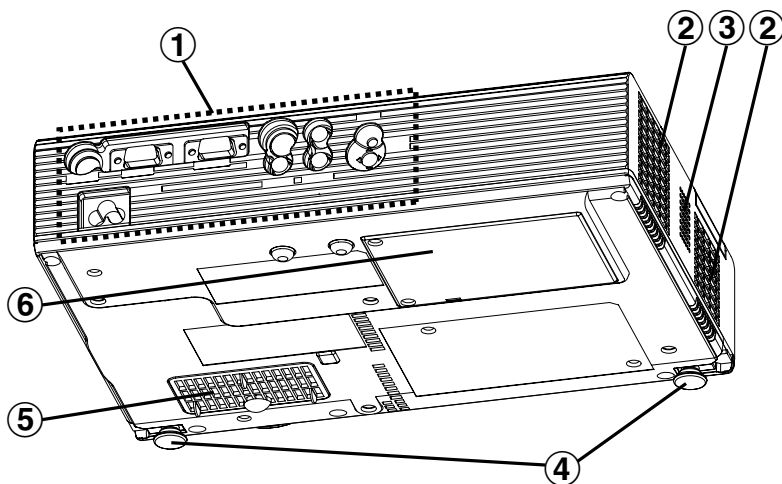
⑦ **Projection lens**

⑧ **Remote control signal receptor** (page 23)

⑨ **Wireless card slot** (PT-LB10NTU only) (page 18)

Insert the wireless card into here.

## Projector <Back and bottom>



- ① **Connector panel** (page 15)
- ② **Air outlet port**  
Do not cover this port.
- ③ **Speaker**
- ④ **Front adjustable legs (L/R)** (page 25)
- ⑤ **Air inlet port, Air filter** (page 52)  
Do not cover this port.
- ⑥ **Lamp unit holder** (page 53)

### NOTE:

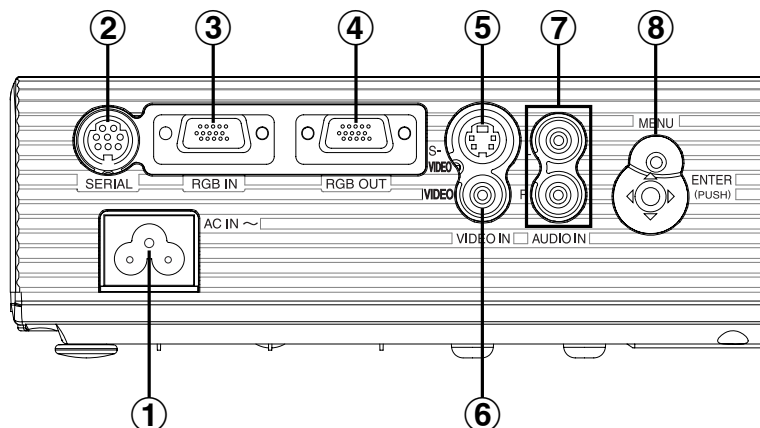
- During projection of an image, the cooling fan will operate, emitting a small noise as it operates. Turning the lamp on or off will cause this noise to increase a little.
- By using the “OPTION2” menu to set “LAMP POWER” to “LOW”, the operating sound of the fan can be reduced. (Refer to page 45.)

## WARNING

**Do not place your hands or other objects close to the air outlet port.**

- Heated air comes out of the air outlet port. Do not place your hands or face, or objects which cannot withstand heat close to this port, otherwise burns or damage could result.

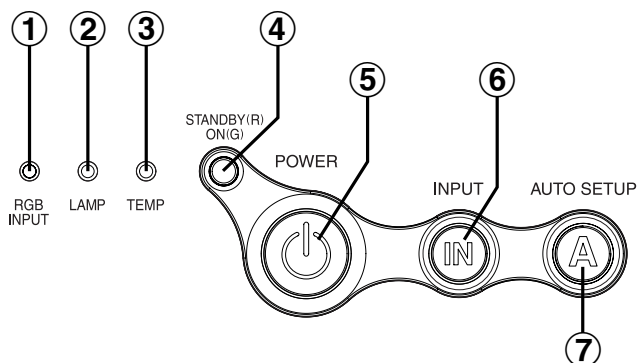
## Connector panel



- ① **Power input socket (AC IN)** (page 24)  
The accessory power cord is connected here.  
Do not use any power cord other than the accessory power cord.
- ② **SERIAL connector** (pages 21, 22 and 62)  
This connector is used to connect a personal computer to the projector in order to control the projector externally. (RS-232C compatible)
- ③ **RGB IN connector** (pages 21 and 22)  
This connector is used to input RGB signals and YPbPr signals.
- ④ **RGB OUT connector** (page 21)  
This connector is used to output RGB signals and YPbPr signals from the RGB IN connector.
- ⑤ **S-VIDEO IN connector** (pages 22 and 41)  
This connector is used to input signals from S-VIDEO-compatible equipment such as a video deck. The connector is S1 signal compatible, and it automatically switches between 16:9 and 4:3 aspect ratios in accordance with the type of signal being input.
- ⑥ **VIDEO IN connector** (page 22)  
This connector is used to input video signals from video equipment such as a video deck.
- ⑦ **AUDIO IN L-R connectors** (pages 21 and 22)
- ⑧ **Menu operation (on connector panel)** (page 16)

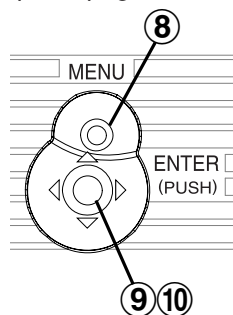


## Projector control panel

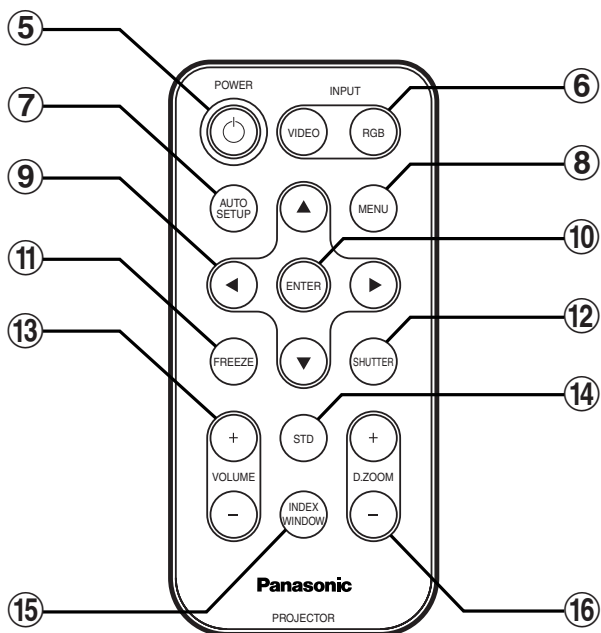


## Menu operation

<on connector panel: page 15>



## Remote control unit



① **RGB INPUT indicator**

This indicator illuminates when a signal is being input to the RGB IN connector.

② **LAMP indicator** (page 51)

This indicator illuminates when it is time to replace the lamp unit. It flashes if a circuit abnormality is detected.

③ **TEMP indicator** (page 50)

This indicator illuminates if an abnormally high temperature is detected inside the projector or around it. If the temperature rises above a certain level, the power supply will be turned off automatically and the indicator will flash.

④ **Power indicator** (pages 24, 26 and 27)

This indicator illuminates red when the projector is in standby mode, and it illuminates green when a picture starts to be projected.

⑤ **POWER button** (pages 24 and 26)

⑥ **INPUT buttons** (page 25)

These buttons are used to switch the input signals from the connected equipment.

⑦ **AUTO SETUP button** (pages 25 and 28)

If this button is pressed while a picture is being projected, the projection settings will be adjusted automatically in accordance with the signal being input. In addition, the angle of tilt of the projector will be automatically detected and adjusted in order to correct any keystone distortion.

⑧ **MENU button** (pages 32 and 34)

This button is used to display the "MAIN MENU". When a menu screen is being displayed, this button can be used to return to a previous screen or to clear the screen.

⑨ **Arrow (▲▼◀▶) buttons** (page 34)

These buttons are used to select and adjust items in the on-screen menus.

⑩ **ENTER button** (page 34)

This button is used to accept and to activate items selected in the on-screen menus.

⑪ **FREEZE button** (page 29)

This button is used to momentarily freeze projection so that a still picture is displayed.

⑫ **SHUTTER button** (page 29)

This button is used to momentarily turn off the picture and sound.

⑬ **VOLUME +/- buttons** (page 30)

These buttons are used to adjust the volume of the sound output from the projector's built-in speaker. Refer to page 33 for details on how to adjust the volume using the buttons on the projector control panel.

⑭ **STD (standard) button** (page 35)

This button is used to reset the projector adjustment values to the factory default settings.

⑮ **INDEX WINDOW button** (page 31)

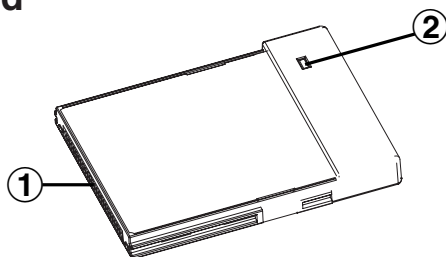
This button can be used to split the image projection area into a still picture and a moving picture. When "NETWORK" is selected, screen display will be switched.

⑯ **D.ZOOM +/- buttons** (page 30)

These buttons are used to enlarge the projected image.

## (PT-LB10NTU only)

### Wireless card



#### ① Connector

This connector is for connecting the wireless card to the projector's card slot. Be careful not to touch the connector.

#### ② Wireless card access indicator

Flashes while the projector is being accessed with personal computers by means of a wireless network.

## Inserting the wireless card (PT-LB10NTU only)

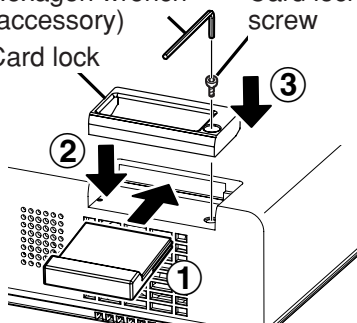
Insert the wireless card before using the PT-LB10NTU.

The card lock is already installed at the factory default setting. When you insert the wireless card, first remove the card lock fixing screw using the hexagon wrench to release the card lock.

Hexagon wrench (accessory)

Card lock fixing screw

Card lock



① Insert the wireless card until it locks.

② Set the card lock.

③ Fasten the card lock with the card lock fixing screw using the hexagon wrench.

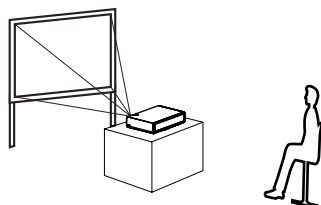
- When removing the wireless card, unlock the card lock, and then pull out the wireless card.

# Setting-up

## Projection methods

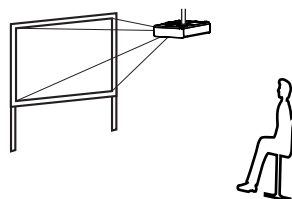
In way of installing projector, any one of the following four projection methods are used. Select whichever projection method matches the setting-up method. (The projection method can be set from the "OPTION2" menu. Refer to page 45 for details.)

### ● Front-desk projection



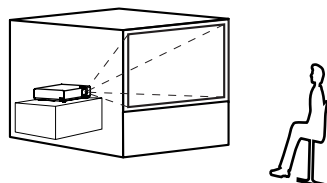
Menu items	Setting
FRONT/REAR	FRONT
DESK/CEILING	DESK

### ● Front-ceiling projection



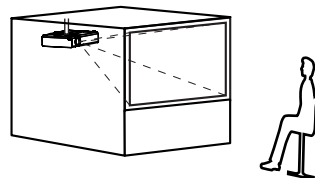
Menu items	Setting
FRONT/REAR	FRONT
DESK/CEILING	CEILING

### ● Rear-desk projection (Using a translucent screen)



Menu items	Setting
FRONT/REAR	REAR
DESK/CEILING	DESK

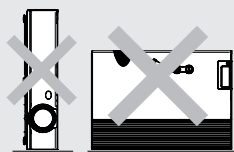
### ● Rear-ceiling projection (Using a translucent screen)



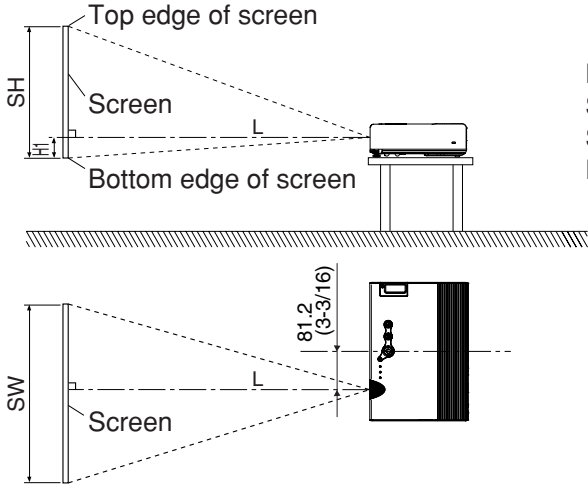
Menu items	Setting
FRONT/REAR	REAR
DESK/CEILING	CEILING

### NOTE:

- You will need to purchase the separate ceiling bracket (ET-PKC80) when using the ceiling installation method.
- If you set up the projector vertically, it may cause damage to the projector.
- It is recommended that you set up the projector in a place that is tilted at less than  $\pm 30^\circ$ . Setting up the projector in places that are tilted at more than  $\pm 30^\circ$  may cause malfunctions.



# Projector position



<Units: mm (inch)>

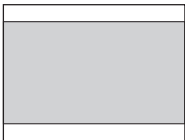
L: Projection distance  
SH: Image height  
SW: Image width  
H1: Distance from center of lens to bottom edge of projected image

## Projection distances

4:3 Screen size size (diagonal)	Projection distance (L)				Height position (H1)
	PT-LB10NTU/PT-LB10U/ PT-LB10SU		PT-LB10VU		
	Wide (LW)	Telephoto (LT)	Wide (LW)	Telephoto (LT)	
0.84 m(33")		1.1 m(3'7")		1.1 m(3'7")	0.08 m(3-1/8")
1.02 m(40")	1.2 m(3'11")	1.4 m(4'7")	1.2 m(3'11")	1.4 m(4'7")	0.09 m(3-17/32")
1.27 m(50")	1.5 m(4'11")	1.7 m(5'6")	1.5 m(4'11")	1.8 m(5'10")	0.11 m(4-5/16")
1.52 m(60")	1.8 m(5'10")	2.1 m(6'10")	1.8 m(5'10")	2.1 m(6'10")	0.14 m(5-1/2")
1.78 m(70")	2.1 m(6'10")	2.4 m(7'10")	2.1 m(6'10")	2.5 m(8'2")	0.16 m(6-9/32")
2.03 m(80")	2.4 m(7'10")	2.8 m(9'2")	2.4 m(7'10")	2.9 m(9'6")	0.18 m(7-1/16")
2.29 m(90")	2.7 m(8'10")	3.2 m(10'5")	2.8 m(9'2")	3.2 m(10'5")	0.20 m(7-27/32")
2.54 m(100")	3.0 m(9'10")	3.5 m(11'5")	3.0 m(9'10")	3.6 m(11'9")	0.22 m(8-21/32")
3.05 m(120")	3.6 m(11'9")	4.2 m(13'9")	3.7 m(12'1")	4.3 m(14'1")	0.26 m(10-7/32")
3.81 m(150")	4.5 m(14'9")	5.3 m(17'4")	4.6 m(15'1")	5.4 m(17'8")	0.33 m(12-31/32")
5.08 m(200")	6.0 m(19'8")	7.1 m(23'3")	6.1 m(20')	7.3 m(23'11")	0.44 m(17-5/16")
6.35 m(250")	7.5 m(24'7")	8.9 m(29'2")	7.6 m(24'11")	9.1 m(29'10")	0.55 m(21-5/8")
7.62 m(300")	9.0 m(29'6")	10.7 m(35'1")	9.2 m(30'2")	11.0 m(36'1")	0.66 m(25-31/32")

### NOTE:

- The dimensions in the table above are approximate.
- If you use the projection distance for the 16:9 screen, the 4:3 projection image overflows the screen at the top and bottom.
- For details about projected image distances, refer to page 61.

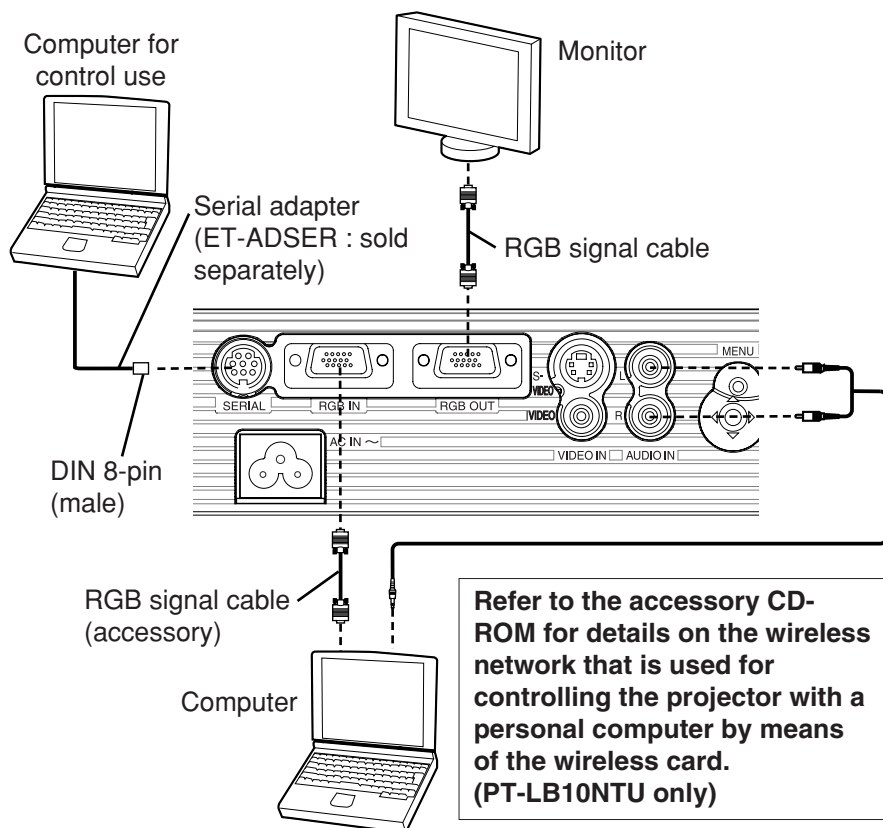


# Connections

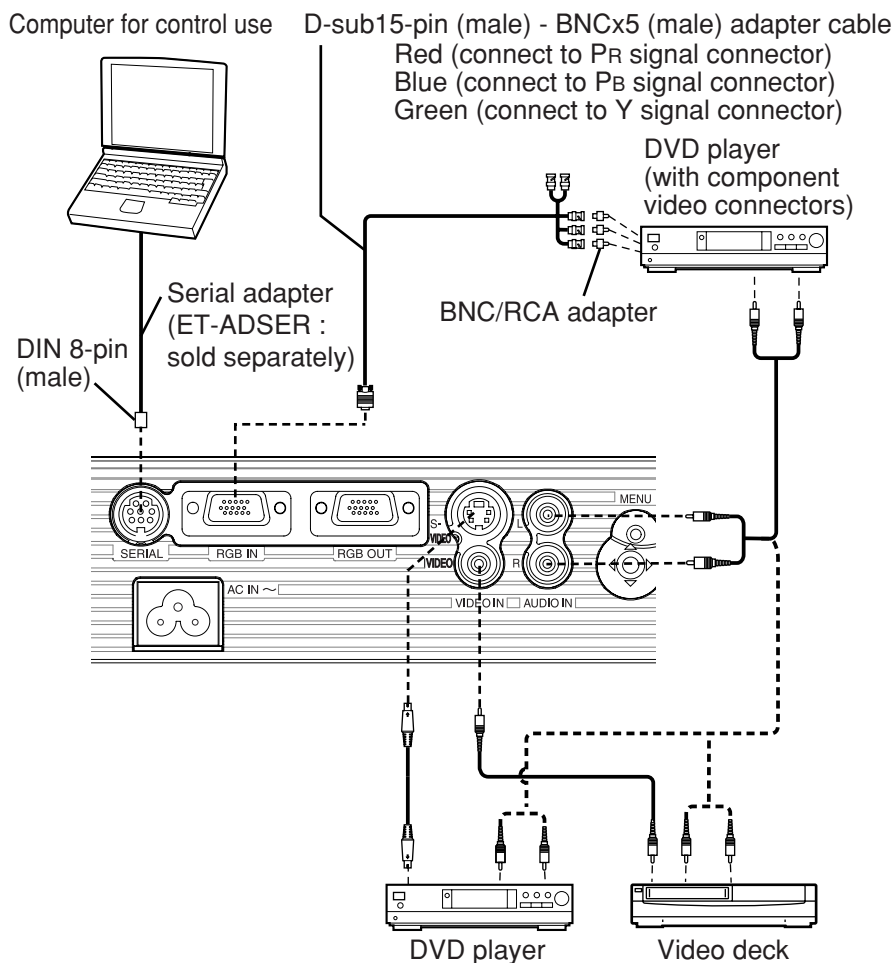
## Notes on connections

- Read the instruction manual for each peripheral device carefully before connecting it.
- Turn off the power supply for all peripheral devices before making any connections.
- If the cables necessary for connection are not included with the peripheral device or available as an option, you may need to prepare a proper cable for the device concerned.
- If there is a lot of jitter in the video signal, the projected image may flicker. In such cases, it will be necessary to connect a TBC (time base corrector).
- Refer to the list on page 60 for details on compatible signals which can be input to the projector.
- Only one audio system circuit is available for the AUDIO IN L-R connectors, so if you change the audio input source, you will need to remove and insert the appropriate plugs.

## Connecting to computer



## Connecting to video equipment



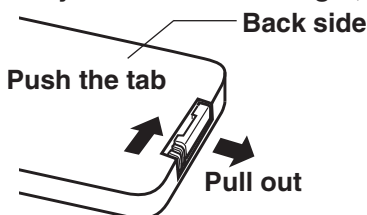
### NOTE:

- If the signal cables are disconnected or if the power supply for the computer or video deck is turned off while "D.ZOOM"(digital zoom) or "INDEX WINDOW" is being used, these functions will be cancelled.

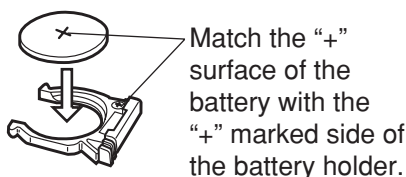
# Preparation for the remote control unit

Insert the accessory lithium battery while making sure that the polarities are correct.

- ① While pushing the battery holder tab to the right, pull out the battery holder.



- ② Insert the battery into the battery holder so that the + side is facing upward.



- ③ Insert the battery holder.



## NOTE:

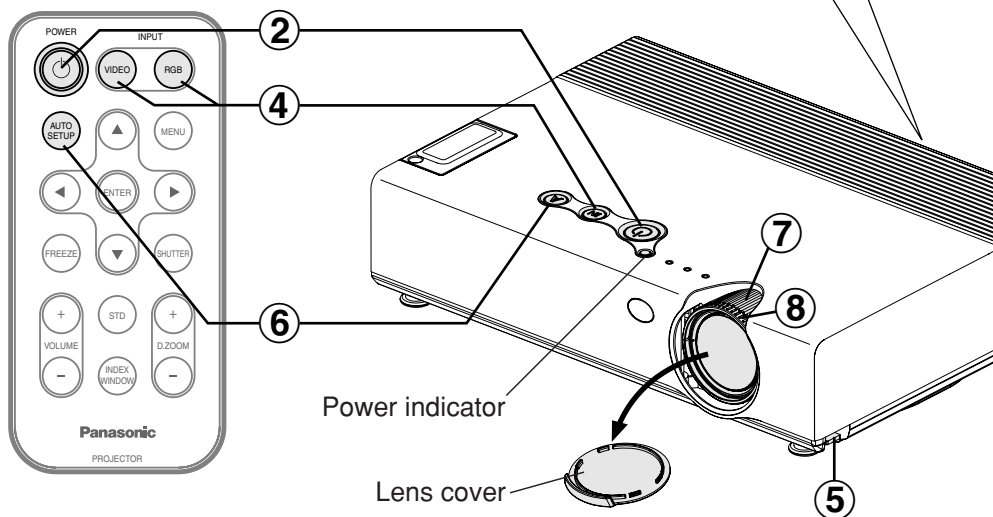
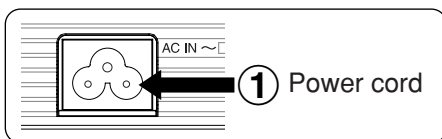
- Do not drop the remote control unit.
- Keep the remote control unit away from liquids.
- Remove the battery if not using the remote control unit for long periods.
- Use only CR2025 batteries as replacement batteries.
- If the remote control unit is held so that it is facing directly in front of the remote control signal receptor, the operating range is within approximately 7 m (23') from the surfaces of the receptor. Furthermore, the remote control unit can be operated from an angle of  $\pm 30^\circ$  to the left or right and  $\pm 15^\circ$  above or below the receptors.
- If there are any obstacles in between the remote control unit and the receptor, the remote control unit may not operate correctly.
- If strong light is allowed to shine onto the remote control signal receptor, correct projector operation may not be possible. Place the projector as far away from light sources as possible.
- If facing the remote control unit toward the screen to operate the projector, the operating range of the remote control unit will be limited by the amount of light reflection loss caused by the characteristics of the screen used.



# Turning on the power

## Before turning on the power

- 1, Ensure that all peripheral devices are connected properly.
- 2, Remove the lens cover.



## 1 Connect the accessory power cord to the AC IN socket.

- The power indicator on the projector will illuminate red.

## 2 Press the POWER button.

- The power indicator on the projector will flash green. After a short period, the indicator will illuminate green, and a picture will be projected.

## 3 Turn on the power of all connected devices.

- Start the play function of a device such as a DVD player.

### NOTE:

- If the power cord was disconnected during projection when the projector was used the last time, projection will start after the mains lead is connected (when "POWER MEMORY" in the "OPTION2" menu is set to "ON"). Refer to page 46 for details.
- A tinkling sound may be heard when the lamp unit is turned on, but this is not a sign of a malfunction.

## ④ Press the input select button to select the input signal.

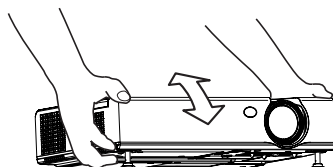
Input select buttons	IN	VIDEO	RGB
Changing signals	<div> <div>VIDEO</div> <div>↑</div> <div>NETWORK</div> </div> <div> <div>S-VIDEO</div> <div>↓</div> <div>RGB</div> </div>	<div> <div>VIDEO</div> <div>↕</div> <div>S-VIDEO</div> </div>	<div> <div>RGB</div> <div>↕</div> <div>NETWORK</div> </div>

- A picture will be projected in accordance with the selected input signal.
- When a YPbPr signal is being input, “YPbPr” will be displayed instead of “RGB”.
- “NETWORK” is for PT-LB10NTU only.

Follow the procedure below when you set the projector up first, and when you change the setup place.

## ⑤ Adjusting the angle

- While pressing the adjuster buttons, adjust the forward/back angle of tilt of the projector. Adjust so that the projector is as vertical to the screen as possible.



## ⑥ Press the AUTO SETUP button to initiate automatic positioning.

- The tilt of the projector and the input signal will be detected and keystone distortion and the position of the image will be corrected. (Refer to page 28 for details.)

AUTO SETUP

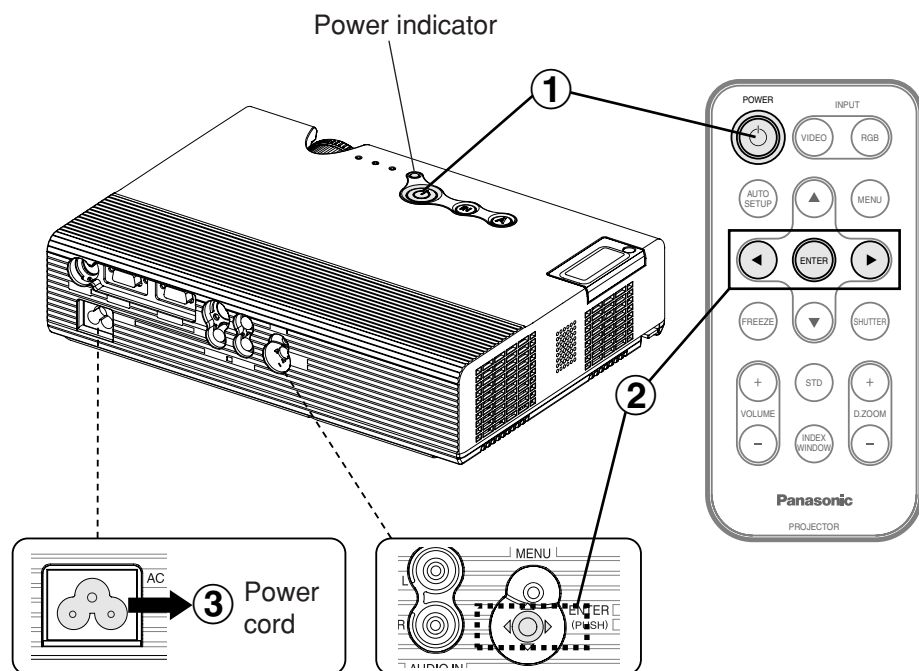
## ⑦ Adjusting the size

- Turn the zoom ring to adjust the size of the projected image.

## ⑧ Adjusting the focus

- Turn the focus ring to adjust the focus of the projected image.

# Turning off the power



## 1 Press the **POWER** button.

- “POWER OFF” is displayed on the screen.

POWER OFF  
OK CANCEL

## 2 Press the ◀ or ▶ button to select “OK”, and then press the **ENTER** button.

- The lamp unit will switch off and the picture will stop being projected. (The power indicator on the projector will illuminate orange while the cooling fan is still operating.)

## 3 Disconnect the power cord after the power indicator on the projector illuminates red.

### NOTE:

- You can also turn off the power by pressing the POWER button twice or by holding it down for at least 0.5 seconds.
- When the projector is in standby mode (the power indicator on the projector is illuminated red), the projector continues to draw approximately 6 W of power even when the cooling fan has stopped.

### Direct power off function

You can disconnect the power cord during projection or immediately after use and move the projector. The cooling fan will operate by the internal power supply to cool down the lamp.

- When this function is used, it may take more time for the lamp to turn back on again compared to when the lamp cools down with the power cord connected.
- Do not put the projector in a bag while the cooling fan is operating.

## CAUTION

**If not using the projector for an extended period of time, disconnect the power cord plug from the wall outlet.**

- If dust builds up on the power cord plug, the resulting humidity may damage the insulation, which could result in fire.
- This projector continues to draw approximately 6 W of power even when the power is turned off.

### Power indicator

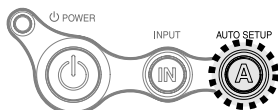
Power indicator status		Projector status
Red	Illuminated	The projector is in standby mode and image projection is possible by pressing the POWER button.
Green	Flashing	The projector is preparing for projection after the power is turned on while the power indicator is illuminated red. (After a short period, a picture will be projected.)
	Illuminated	A picture is being projected.
Orange	Illuminated	The lamp is cooling down after the power is turned off. (The cooling fan is operating.)
	Flashing	The projector is preparing for projection after the power is turned on while the power indicator is illuminated orange. (After a short period, a picture will be projected.)

# Correcting keystone distortion and automatic positioning (AUTO SETUP)

This projector detects its degree of tilt and the input signal. Keystone distortion and the position of the image can then be corrected automatically in accordance with the input signal.



Projector control panel

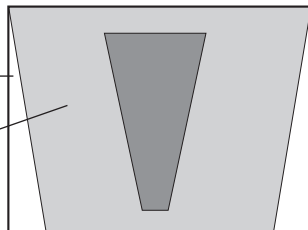


## Press the AUTO SETUP button.

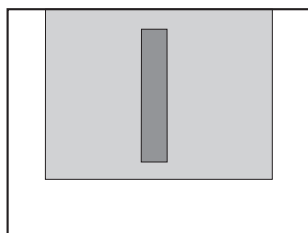
(When the projected image has caused keystone distortion)

Screen

Projected image



- Automatic positioning will be carried out.



## NOTE:

- “AUTO SEARCH” will also be carried out. (When “AUTO SEARCH” is set to “ON”, refer to page 44 for details.)
- When RGB signals are being input, “DOT CLOCK”, and “CLOCK PHASE” will be adjusted automatically in addition to keystone distortion and the position of the image being corrected (except when the dot clock frequency is 100 MHz or higher). Refer to page 40 for details.
- If the edges of the projected image are indistinct, or if a dark picture is being projected, the automatic setup processing may stop automatically before it is complete. If this happens, project a different picture and then press the AUTO SETUP button again.
- Set “AUTO KEYSTN” in the “OPTION1” menu to “OFF” to prevent any deterioration of the picture as a result of keystone correction. (Refer to page 44.)

# Turning off the picture and sound momentarily (SHUTTER)

The “SHUTTER” function can be used to momentarily turn off the picture and sound from the projector when the projector is not being used for short periods of time, such as during breaks in meetings or when carrying out preparation. The projector uses less power in “SHUTTER” mode than it does in normal projection mode.



## Press the SHUTTER button.

- The picture and sound will be turned off.
- Press any button on either the projector or remote control unit to return to normal operating mode.

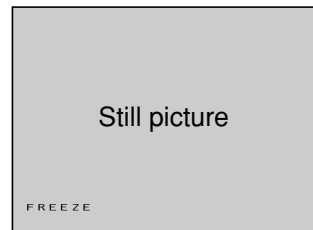
### NOTE:

- “SHUTTER” on the “MAIN MENU” is the same function.

# Pausing a picture (FREEZE)



## Press the FREEZE button.

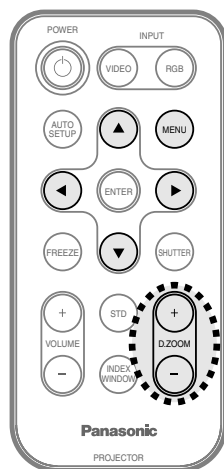


- The picture being projected will be paused.
- Press the FREEZE button again to cancel the still picture.

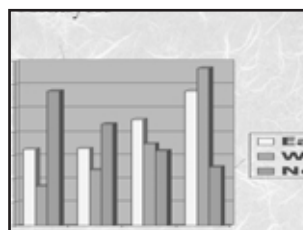
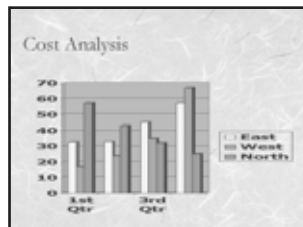
### NOTE:

- The FREEZE button will be disabled when “NETWORK” is selected. (PT-LB10NTU only)

# Enlarging the picture (D.ZOOM)



Press the D.ZOOM +/- button.



- The picture will then be enlarged to 1.5 times the normal size.

## The remote control unit functions during D.ZOOM (digital zoom)

Press the ▲, ▼, ◀ and ▶ buttons to move the enlarged area which you want to project.

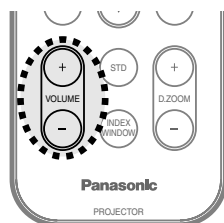
Press the D.ZOOM +/- buttons to change the enlargement ratio.

Press the MENU button to return to the normal screen.

### NOTE:

- The enlargement ratio can be changed within the range of x1 to x2, in steps of 0.1. When RGB signals are being input, the enlargement ratio can be changed within the range of x1 to x3, except when the "FRAME LOCK" is set to "ON".
- If the type of signal being input changes while the digital zoom function is being used, the digital zoom function will be cancelled.

# Adjusting the volume (VOLUME)



Press the VOLUME +/- button.

- Press the + button to raise the volume.
- Press the - button to lower the volume.

### NOTE:

- You can also select "VOLUME" from the "MAIN MENU" to adjust the volume.
- The VOLUME button will be disabled when "NETWORK" is selected. (PT-LB10NTU only)

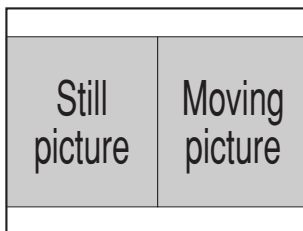
# Displaying two screens (INDEX WINDOW)

This function lets you store a picture which is being projected into memory, so that you can display a still picture and a moving picture on the screen.



## Press the INDEX WINDOW button.

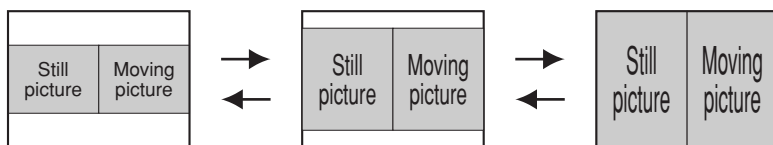
- The aspect ratio of the screen changes and the image is vertically elongated in comparison to a normal image.
- When “NETWORK” is selected, screen display will be switched between four window style and index style. (PT-LB10NTU only. Refer to the accessory CD-ROM for details.)



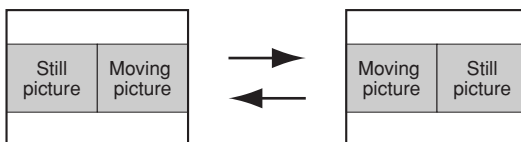
## The remote control unit functions during INDEX WINDOW

### Press the ▲ or ▼ button to select a screen size.

It can switch to three stages.



### Press the ◀ or ▶ button to switch between the still picture screen and moving picture screen.



### Press the ENTER button to capture the present moving picture in a still window.

### Press the MENU button to return to the previous screen.

## NOTE:

- When the screen size is changed, the picture's aspect ratio will also change. Make sure that you fully understand the notes on “ASPECT” on page 42 before using the “INDEX WINDOW” function.
- “INDEX WINDOW” on the “MAIN MENU” is the same function.



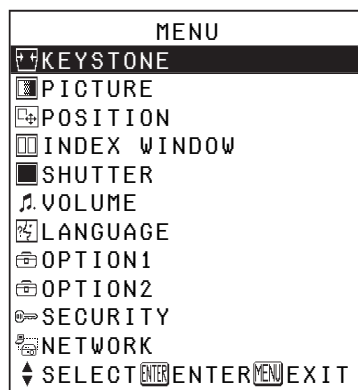
# On-screen menus

## Menu screens

The various settings and adjustments for this projector can be carried out by selecting the operations from on-screen menus.

The general arrangement of these menus is shown below.

### MAIN MENU



- Press the MENU button to display the “MAIN MENU”. Refer to page 34 for details on how to operate the on-screen menus.

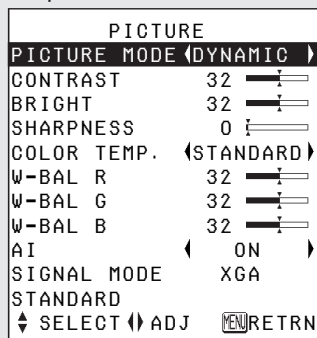
### KEYSTONE correction (page 36)



- Keystone distortion of the on-screen display will not be corrected.

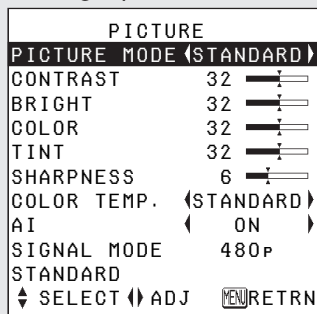
### PICTURE menu (page 37)

When an RGB signal is being input or NETWORK is selected

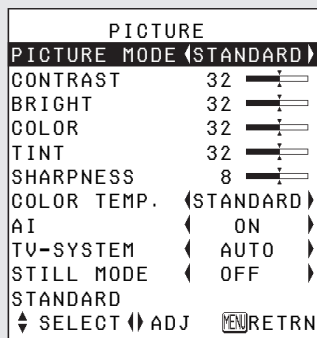


- When NETWORK is selected, “W-BAL R/G/B” settings will not be displayed. (PT-LB10NTU only)








When a YPbPr signal is being input







When an S-VIDEO/VIDEO signal is being input



-  **POSITION menu** (page 40)  
When an RGB/YPbPr signal is being input

POSITION	
POSITION	
DOT CLOCK	32 
CLOCK PHASE	16 
ASPECT	4:3 
RESIZING	ON 
FRAME LOCK	OFF 
STANDARD	
⬇ SELECT  ENTER  RETRN	

When an S-VIDEO/VIDEO signal is being input


POSITION	
POSITION	
ASPECT	4:3 
RESIZING	ON 
STANDARD	
⬇ SELECT  ENTER  RETRN	

-  **INDEX WINDOW function**  
(page 31)

-  **SHUTTER function** (page 29)












### **VOLUME adjustment**

Press the ENTER button, and then press the ◀ or ▶ button to adjust the volume.













-  **LANGUAGE menu** (page 43)


LANGUAGE	ENGLISH
ENGLISH	
DEUTSCH	
FRANÇAIS	
ESPAÑOL	
ITALIANO	
РУССКИЙ	
한국어	
中文	
⬇ SELECT  ENTER  RETRN	





-  **OPTION1 menu** (page 43)


OPTION1	
OSD	ON 
AUTO SEARCH	ON 
AUTO SIGNAL	ON 
AUTO KEYSTN	ON 
RGB/YPbPr	AUTO 
VGA60/480P	480P 
SXGA MODE	SXGA 
NR	OFF 
BLACKBOARD	OFF 
⬇ SELECT  ADJ  RETRN	






-  **OPTION2 menu** (page 43)

OPTION2	
BACK COLOR	BLUE 
FRONT/REAR	FRONT 
DESK/CEILING	DESK 
FAN CONTROL	STANDARD 
LAMP POWER	HIGH 
LAMP RUNTIME	10H 
FUNC 1	INDEX 
CONTROL KEY	ON 
AUTO POW. OFF	DISABLE 
POWER MEMORY	ON 
⬇ SELECT  ADJ  RETRN	

-  **SECURITY menu** (page 47)

SECURITY	
INPUT PASSWD	OFF 
AMEND PASSWD	
TEXT DISPLAY	OFF 
TEXT CHANGE	
⬇ SELECT  ADJ  RETRN	

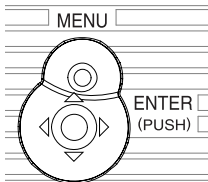
-  **NETWORK menu** (page 49)  
(PT-LB10NTU only)

NETWORK	
NETWORK	1
NAME CHANGE	LB10NT 
INPUT PASSWD	OFF 
AMEND PASSWD	
WEB CONTROL	ON 
DEFAULT	
⬇ SELECT  ENTER  RETRN	

# Menu operation guide



Menu operation  
(on connector panel)



- ① Press the MENU button.  
The “MAIN MENU” will be displayed.

MENU	
⬇	KEYSTONE
🖼	PICTURE
📏	POSITION
🖼	INDEX WINDOW
■	SHUTTER
🎵	VOLUME
🗣	LANGUAGE
📁	OPTION1
📁	OPTION2
🔒	SECURITY
🌐	NETWORK
⬇	SELECT ENTER ENTER MENU EXIT

- ② Press the ▲ or ▼ button to select an item.  
Selected item will be displayed in blue.

MENU	
⬇	KEYSTONE
🖼	PICTURE
📏	POSITION
📏	INDEX WINDOW
■	SHUTTER
🎵	VOLUME
🗣	LANGUAGE
📁	OPTION1
📁	OPTION2
🔒	SECURITY
🌐	NETWORK
⬇	SELECT ENTER ENTER MENU EXIT

- ③ Press the ENTER button to accept the selection.  
The selected menu screen or adjustment screen will then be displayed.  
(Example: “PICTURE” menu)


PICTURE	
PICTURE MODE (STANDARD)	
CONTRAST	32
BRIGHT	32
COLOR	32
TINT	32
SHARPNESS	8
COLOR TEMP.	(STANDARD)
AI	ON
TV-SYSTEM	AUTO
STILL MODE	OFF
STANDARD	
⬇	SELECT ⬇ ADJ MENU RETRN

**NOTE:**

- Press the MENU button to return to the previous screen.

- ④ Press the ▲ or ▼ button to select an item, and then press the ◀ or ▶ button to change or adjust the setting.

An individual adjustment screen such as the one shown below will be displayed for bar scale items.

BRIGHT 32 

The bar scale will turn green when any adjustment changes the setting from the factory set value.

## Unavailable on-screen menu items






This projector has unadjustable items and unusable functions depending on the signal being input.

When an item cannot be adjusted or a function cannot be used, the corresponding on-screen menu display does not appear, and the item or function will not work even if the ENTER button is pressed.

## Returning a setting to the factory default

If you press the STD (standard) button on the remote control unit, you can return settings to the factory default settings. However, the operation of this function varies depending on which screen is being displayed.

- When a menu screen is being displayed


PICTURE	STD
PICTURE MODE (STANDARD) ▶	
CONTRAST 32	
BRIGHT 32	
COLOR 32	
TINT 32	
SHARPNESS 8	
COLOR TEMP. (STANDARD) ▶	
AI ◀ ON ▶	
TV-SYSTEM ◀ AUTO ▶	
STILL MODE ◀ OFF ▶	
STANDARD	
◀ SELECT ENTER ENTER MENU RETRN	

All items displayed will be returned to their factory default settings, “STD” will be displayed in the top-right screen and the bar scale will appear white.

### NOTE:

- You can also select “STANDARD” from the menu screen and then press the ENTER button.

- When an individual adjustment screen is being displayed

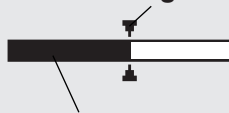
BRIGHT 32 

Only the item displayed will be returned to the factory default setting, and the bar scale will appear white.

### NOTE:

- Triangle symbols above and below the bar scale indicate the factory default setting. Items which do not have these triangle symbols cannot be returned to the factory default setting.

### Indicates the standard factory default setting



### Indicates the current adjustment value

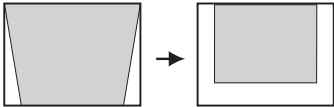
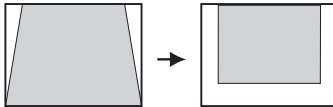
- The positions of triangle symbols vary depending on the type of signal being input.

# Correcting keystone distortion

Keystone distortion is corrected automatically when the projector's automatic setup function is used, but this correction will not apply if the screen itself is tilted. In such cases, you can correct the keystone distortion manually with the following procedure.

## Vertical keystone distortion correction only.

KEYSTONE 0 

Vertical keystone distortion correction		
		
Operation	Press the ► button.	Press the ◄ button.

**NOTE:**

- If you press the AUTO SETUP button after correcting the keystone distortion manually, the automatic keystone correction function will operate and the corrected picture will return to its previous incorrect condition. To prevent this from happening, you can set “AUTO KEYSTN” in the “OPTION1” menu to “OFF”. (Refer to page 44.)
- Vertical keystone distortion can be corrected to  $\pm 30^\circ$  of the angle of tilt. However, the greater the correction amount, the more the picture quality will deteriorate, and the harder it will become to achieve a good level of focus. To obtain the best picture quality, set up the projector and screen in such a way that the amount of keystone correction required is as minimal as possible.
- The picture size will also change when correction of keystone distortion is carried out.

## Adjusting the picture

Press the ▲ or ▼ button on the projector or remote control unit to select an item, and then press the ◀ or ▶ button to change the setting.










For items with bar scales, press the ENTER button or the ◀ or ▶ button to display the adjustment screen, and then press the ◀ or ▶ button to make the adjustment.

When an RGB signal is being input  
or NETWORK is selected









PICTURE		
PICTURE	MODE	(DYNAMIC)
CONTRAST	32	
BRIGHT	32	
SHARPNESS	0	
COLOR TEMP.	(STANDARD)	
W-BAL R	32	
W-BAL G	32	
W-BAL B	32	
AI	(ON)	
SIGNAL MODE	XGA	
STANDARD		
⬇ SELECT ⬆ ADJ  RETRN		

When NETWORK is selected, “W-BAL R/G/B” settings will not be displayed. (PT-LB10NTU only)

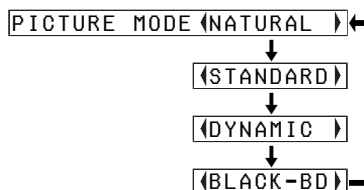
When an YPB<sub>R</sub> signal is being input

PICTURE		
PICTURE	MODE	(STANDARD)
CONTRAST	32	
BRIGHT	32	
COLOR	32	
TINT	32	
SHARPNESS	6	
COLOR TEMP.	(STANDARD)	
AI	( ON )	
SIGNAL MODE	480P	
STANDARD		
 SELECT  ADJ		 

When an S-VIDEO/VIDEO signal is being input

PICTURE		
PICTURE	MODE	(STANDARD)
CONTRAST	32	
BRIGHT	32	
COLOR	32	
TINT	32	
SHARPNESS	8	
COLOR TEMP.	(STANDARD)	
AI	( ON )	
TV-SYSTEM	( AUTO )	
STILL MODE	( OFF )	
STANDARD		
 SELECT  ADJ  RETRN		

## PICTURE MODE



Select the picture mode that best matches the image source and room conditions.

The mode best used in dark rooms is "NATURAL". For rooms having regular lighting conditions in use, select "STANDARD". For exceptionally bright rooms, use "DYNAMIC".

“BLACK-BD” is for the PT-LB10NTU/PT-LB10U/PT-LB10SU only. This item is available only when “BLACKBOARD” in the “OPTION1” menu is set to “ON”. Select “BLACK-BD” when projecting onto blackboards.

## CONTRAST

This adjusts the contrast of the picture. (Adjust the “BRIGHT” setting first if required before adjusting the “CONTRAST” setting.)

The picture is bright: ◀ button

The picture is dark: ▶ button

## BRIGHT

This adjusts the darker areas (black areas) in the picture.

Black areas are too light: ◀ button

Dark areas are too solid: ▶ button

## COLOR

(S-VIDEO/VIDEO/YPbPr only)

The color is too deep: ◀ button

The color is too pale: ▶ button

## TINT

(NTSC/NTSC 4.43/YPbPr only)

This adjusts the flesh tones in the picture.

The flesh tones are greenish:

◀ button

The flesh tones are reddish:

▶ button

## SHARPNESS

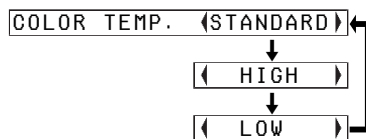
To soften the picture details:

◀ button

To sharpen the picture details:

▶ button

## COLOR TEMP.



This is used to adjust the white areas of the picture if they appear bluish or reddish.

## White balance R/G/B (W-BAL R/G/B)

(RGB only)

This is used to adjust the white areas of the picture if they appear colourised.

To make the selected color lighter:

◀ button

To make the selected color stronger:

▶ button

## AI ON

The lamp is controlled according to the input signals to project images with the best quality.

## OFF

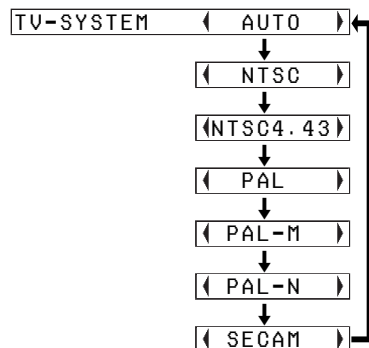
“AI” is disabled.

### NOTE:

- “AI” is disabled when “LAMP POWER” is set to “LOW”. (Refer to page 45.)

## TV-SYSTEM

(S-VIDEO/VIDEO only)



This should normally be set to “AUTO”. If the signal is of such poor quality that the correct format cannot be automatically distinguished, change the setting manually to the required TV system.

### NOTE:

- When set to “AUTO”, the projector automatically distinguishes between NTSC/NTSC 4.43/PAL/PAL60/PAL-M/PAL-N/SECAM signals.

## STILL MODE

(S-VIDEO/VIDEO only)

To reduce flickering of still images (vertical flicker), set “STILL MODE” to “ON”.

### NOTE:

- Set to “OFF” when playing back moving images.

## SIGNAL MODE

(RGB/YPbPr/NETWORK only)

This displays the type of signal which is currently being projected. Refer to the list on page 60 for details on each type of signal.

### Projecting sRGB-compatible pictures

sRGB is an international color reproduction standard (IEC61966-2-1) established by the International Electrotechnical Commission (IEC). If you would like the colors in sRGB-compatible pictures to be reproduced more faithfully, make the following settings.

- ① Press the ▲ or ▼ button to select “PICTURE MODE”, and then press the ◀ or ▶ button to select “NATURAL”.
- ② Press the STD (standard) button on the remote control unit.
- ③ Press the ▲ or ▼ button to select “COLOR TEMP.”, and then press the ◀ or ▶ button to select “STANDARD”.

### NOTE:

- sRGB is only enabled when RGB signals are being input (when “LAMP POWER” is set to “HIGH” and “AI” is set to “OFF”).



# Adjusting the position

When an RGB signal is being input, press the AUTO SETUP button first to initiate automatic positioning. If the optimum setting is not obtained when "AUTO SETUP" is carried out, adjust by the following procedure.

Press the ▲ or ▼ button on the projector or remote control unit to select an item, and then press the ◀ or ▶ button to change the setting. For items with bar scales, press the ENTER button or the ◀ or ▶ button to display the adjustment screen, and then press the ◀ or ▶ button to make the adjustment.

When an RGB/YPbPr signal is being input

POSITION		
POSITION		
DOT CLOCK	32	
CLOCK PHASE	16	
ASPECT	◀ 4 : 3 ▶	
RESIZING	◀ ON ▶	
FRAME LOCK	◀ OFF ▶	
STANDARD		
⬇ SELECT  ENTER  RETRN		

When an S-VIDEO/VIDEO signal is being input

POSITION		
POSITION		
ASPECT	◀ 4 : 3 ▶	
RESIZING	◀ ON ▶	
STANDARD		
⬇ SELECT  ENTER  RETRN		

## POSITION

Moves the picture position.

Press the ENTER button to display the "POSITION" screen.

Press the ◀ or ▶ button to move the picture horizontally.

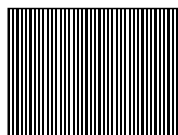
Press the ▲ or ▼ button to move the picture vertically.

POSITION	H	64	
	V	32	

## DOT CLOCK

(RGB only)

Periodic striped pattern interference (noise) may occur when a striped pattern such as the one below is projected. If this happens, press the ◀ or ▶ button to adjust so that any such noise is minimised.



## CLOCK PHASE

(RGB/YPbPr only)

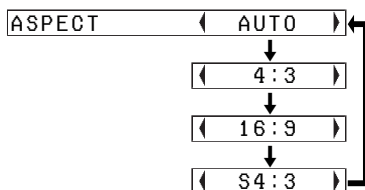
Adjust the "DOT CLOCK" setting first before carrying out this adjustment. Press the ◀ or ▶ button to adjust so that the noise level is least noticeable.

### NOTE:

- If signals with a dot clock frequency of 100 MHz or higher are being input, interference may not be completely eliminated when the "DOT CLOCK" and "CLOCK PHASE" adjustments are carried out.

## ASPECT

(S-VIDEO/VIDEO/480i, 576i, 480p, and 576p YPbPr only)



### AUTO

(S-VIDEO only)

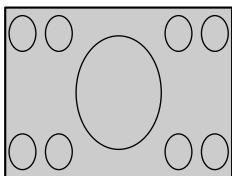
When an S1 video signal is being input, the aspect ratio is changed automatically to project a 16:9 picture.

### 4:3

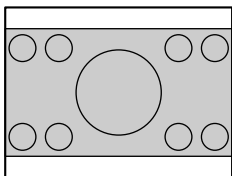
The input signal is projected without change.

### 16:9

The picture is compressed to a ratio of 16:9 and projected.

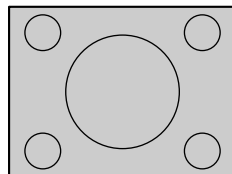


When a horizontally squeezed signal is being input.

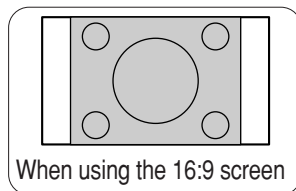
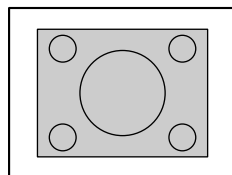


### S4:3

The size of the input signal is compressed to 75% and projected. (This is useful for projecting a picture with a 4:3 aspect ratio onto a 16:9 screen.)



When a 4:3 signal is being input.



### S1 video signals

- S1 video signals are a type of video signal with an aspect ratio of 16:9 which include a detector signal. This detector signal is output by some sources such as wide-vision video decks.
- When "ASPECT" is set to "AUTO", the projector recognizes the detector signal and automatically switches the aspect ratio to 16:9.

**NOTE:**

- If a selected mode does not match the aspect ratio of the input signal, it may affect the quality of viewing of the original picture. Keep this in mind when selecting the aspect ratio.
- If using this projector in places such as cafes or hotels to display programs for a commercial purpose or for public presentation, note that if the aspect ratio (16:9) selection function is used to change the aspect ratio of the screen picture, you may be infringing the rights of the original copyright owner for that program under copyright protection laws.
- If a normal (4:3) picture which was not originally intended for wide-screen viewing is projected onto a wide screen, distortion may occur around the edges of the picture, or part of the picture may not be visible. Such programs should be viewed in 4:3 mode to give proper consideration to the aims and intentions of the original program's creator.

**RESIZING**

This should normally be set to "ON". (This setting is only for signals which have lower resolutions than the LCD panels. Refer to page 60 for details.)

**ON**

The pixel resolution of the input signal is converted to the same resolution as the LCD panels before being projected. For signals with lower resolutions, gaps in the pixels are automatically interpolated into the picture before it is projected. This may sometimes cause problems with the quality of the picture.

**OFF**

The input signal is projected at its original resolution, with no pixel conversion. The projected picture will be smaller than normal, so adjust the zoom setting or move the projector forwards or backwards to adjust the picture size if necessary. If set to "OFF", some features, such as "D.ZOOM" (digital zoom), "KEYSTONE" or "INDEX WINDOW" will not function.

**FRAME LOCK**

If the picture's condition is bad while a RGB moving picture is projected, set "FRAME LOCK" to "ON". Refer to page 60 for compatible RGB signals.

# Changing the display language

Press the ▲ or ▼ button on the projector or remote control unit to select a language, then press the ENTER button to accept the setting.

LANGUAGE	ENGLISH
<b>ENGLISH</b>	
DEUTSCH	
FRANÇAIS	
ESPAÑOL	
ITALIANO	
РУССКИЙ	
한국어	
中文	
⬇ SELECT	ENTER MENU RETRN

Indicates the language which is currently set.

## Option settings

Press the ▲ or ▼ button on the projector or remote control unit to select an item, then press the ◀ or ▶ button to change the setting.

OPTION1	
<b>OSD</b>	<b>ON</b>
AUTO SEARCH	ON
AUTO SIGNAL	ON
AUTO KEYSTN	ON
RGB/YP <sub>B</sub> PR	AUTO
VGA60/480P	480P
SXGA MODE	SXGA
NR	OFF
BLACKBOARD	OFF
⬇ SELECT	⬅ ADJ MENU RETRN

OPTION2	
<b>BACK COLOR</b>	<b>BLUE</b>
FRONT/REAR	FRONT
DESK/CEILING	DESK
FAN CONTROL	STANDARD
LAMP POWER	HIGH
LAMP RUNTIME	10H
FUNC 1	INDEX
CONTROL KEY	ON
AUTO POW. OFF	DISABLE
POWER MEMORY	ON
⬇ SELECT	⬅ ADJ MENU RETRN

## OSD

### ON

The signal name is displayed in the top-right corner of the screen when the input signal is changed.

### OFF

Use this setting when you do not want the signal name to be displayed.

### NOTE:

- The setting for “TV-SYSTEM” will also be displayed when an S-VIDEO/VIDEO signal is being input.

## AUTO SEARCH

This should normally be set to "ON".

### ON

When the power is turned on and "AUTO SETUP" is running, the projector detects which signals are being input and uses these signals for projection.

(If a picture is being projected, the signal source is not automatically changed.)

### OFF

Use this setting when you do not want the signal source to be changed automatically when the power is turned on and "AUTO SETUP" is running.

## AUTO SIGNAL

This should normally be set to "ON".

### ON

"AUTO SETUP" will be carried out automatically when the input signal is changed.

### OFF

"AUTO SETUP" will not function when the input signal is changed.

## AUTO KEYSTN

This should normally be set to "ON".

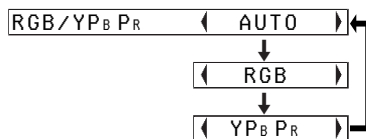
### ON

During "AUTO SETUP", the angle of tilt of the projector is detected and keystone distortion is corrected automatically.

### OFF

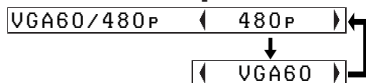
Use this setting when you do not want automatic keystone correction to be carried out during "AUTO SETUP", such as when the screen itself is at an angle.

## RGB/YPbPr



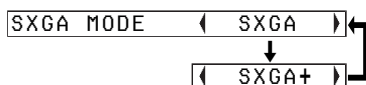
This should normally be set to "AUTO". RGB or YPbPr is selected automatically depending on the synchronising signal status. When 480i, 576i, 480p, 576p, 1 080/60i, 1 080/50i, 720/60p and some VGA480 signals are being input, select "RGB" or "YPbPr" in accordance with the input signal.

## VGA60/480p



Set to "VGA60" when 59.9Hz VGA480 signals are being input (refer to page 60 for details). Set to "480p" when 480p RGB signals are being input.

## SXGA MODE



This setting is only for an SXGA signal.

### SXGA

Select this item normally.

### SXGA+

When the edges of the projected image are not visible, select this item.

## Noise Reduction (NR)

(S-VIDEO/VIDEO only)

If noise occurs from the projector because of a poor input signal, set “NR” to “ON”.

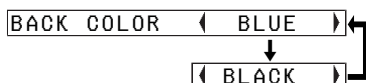
To turn off the “NR” feature, set it to “OFF”.

## BLACKBOARD

(PT-LB10NTU/PT-LB10U/PT-LB10SU only)

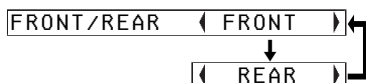
Set to “ON” when “PICTURE MODE” is set to “BLACK-BD”.  
(Refer to page 37.)

## BACK COLOR



This sets the color which is projected onto the screen when no signal is being input to the projector.

## FRONT/REAR



This setting should be changed in accordance with the projector setting-up method.  
(Refer to page 19.)

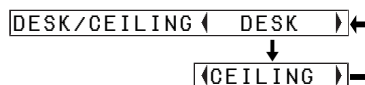
### FRONT

When the projector is placed in front of a screen.

### REAR

When using a translucent screen.

## DESK/CEILING



This setting should be changed in accordance with the projector setting-up method.  
(Refer to page 19.)

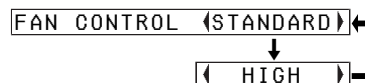
### DESK

When the projector is placed on a desk or similar.

### CEILING

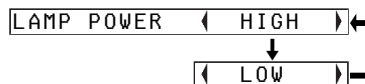
When the projector is suspended from a ceiling using the ceiling bracket (sold separately).

## FAN CONTROL



Set “FAN CONTROL” to “HIGH”, when using this projector at high elevations (above 1 400 m) only.

## LAMP POWER



This setting changes the lamp brightness. When set to “LOW”, the luminance of the lamp is reduced, but the projector uses less power, and the operating noise is also reduced. This can help to extend the lamp’s operating life. If using the projector in small rooms where high luminance is not required, it is recommended that you set the “LAMP POWER” to “LOW”.

### NOTE:

- “LAMP POWER” cannot be set when no signal is being input.

## LAMP RUNTIME

This setting displays the usage time for the lamp unit which is currently being used. When replacing the lamp unit, follow the instructions on page 54, and reset “LAMP RUNTIME” to “0”.

### NOTE:

- The lamp’s operating life varies depending on the usage conditions (such as the “LAMP POWER” setting and the number of times the power is turned on and off).

## FUNC 1



This assigns a function to the FUNC1 button of the ET-RM300 wireless remote control unit (sold separately).

### INDEX

Functions in the same way as the INDEX WINDOW button on the accessory card remote control unit. (page 31)

### KEYSTONE

Functions in the same way as when “KEYSTONE” is selected from the “MAIN MENU”. (page 36)

## CONTROL KEY

To disable the buttons on the projector, set “CONTROL KEY” to “OFF”. A confirmation screen will then be displayed. Select “OK” by using ◀ or ▶ button. To use the buttons on the projector, set to “ON” by using the remote control unit.

## AUTO POW.OFF

If no signal is input to the projector for the duration of the period you set, the projector will return to standby mode. The period can be set from 15 minutes to 60 minutes in 5 minute intervals. If you don’t use this feature, set it to “DISABLE”. This feature will not function when using the “FREEZE” function.

## POWER MEMORY

This sets the projector’s start up status for when the power cord is connected.

### ON

The projector will start from the same status as when the power cord was disconnected. If the power cord was disconnected during projection when the projector was used the last time, projection will start after the power cord is connected.

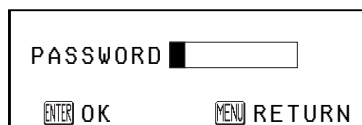
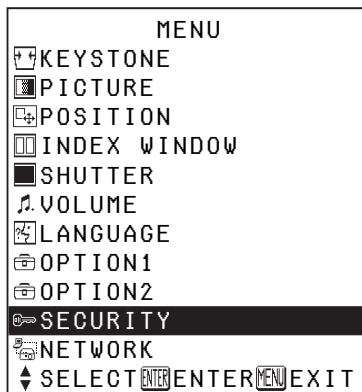
### OFF

The projector will be in standby mode.

# Setting up the security function

This projector is equipped with a security function. A password input screen can be displayed, or a company URL can be set up and displayed at the bottom of the projected image.

Press the ▲ or ▼ button on the projector or remote control unit to select “SECURITY”, then press the ENTER button.

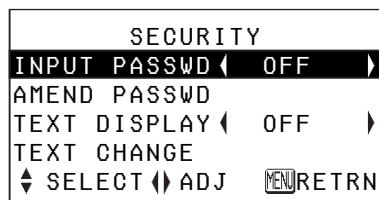


(When you use the “SECURITY” function for the first time)

Press the ▲, ►, ▼, ◀, ▲, ►, ▼ and ◀ buttons in order, then press the ENTER button.

(When a password change has been made before)

Type in the changed password, then press the ENTER button.



## INPUT PASSWD

The password input screen can be displayed when the power is turned on. All of the controls other than the POWER button are disabled unless the password is entered correctly.

### ON

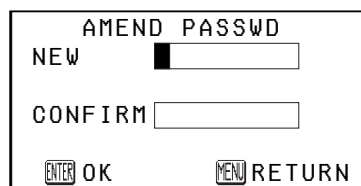
“INPUT PASSWD” is enabled.

### OFF

“INPUT PASSWD” is disabled. The password input screen will not be displayed when the power is turned on.

## AMEND PASSWD

Passwords can be changed. Press the ENTER button to display the “AMEND PASSWD” screen.



- ① Set a password by pressing the ▲, ▼, ◀, and ► buttons.  
(A maximum of 8 buttons can be set.)
- ② Press the ENTER button.
- ③ Enter the password again for confirmation.
- ④ Press the ENTER button.  
Password change will be completed.



### NOTE:

- The entered password will appear as \*. It will not be displayed on the screen.
- If you enter the wrong password, the letters “PASSWORD” and “NEW” will become red. Enter the correct password again.

## TEXT DISPLAY

You can set text to be displayed at the bottom of the projected image at all times.

### ON

“TEXT DISPLAY” is enabled.

### OFF

“TEXT DISPLAY” is disabled.

## TEXT CHANGE

The text which is displayed when “TEXT DISPLAY” is set to “ON” can be changed.

Press the ENTER button to display the “TEXT CHANGE” screen.

TEXT CHANGE

A B C D E F G H I J K L M N O  
P Q R S T U V W X Y Z ; : , .  
a b c d e f g h i j k l m n o  
p q r s t u v w x y z / + - \*

BS OK Cancel

- ① Press the ▲, ▼, ◀ and ▶ buttons to select the characters, then press the ENTER button. (You can enter 22 characters continuously.)
  - Select “BS” to delete a character.
- ② Press the ▲, ▼, ◀ and ▶ buttons to select “OK”, then press the ENTER button.
  - Select “Cancel” to cancel the change.

# Network setup (PT-LB10NTU only)

You need to make adjustments on some items when controlling the projector with a personal computer by means of the wireless network. Refer to the accessory CD-ROM for details.

NETWORK	
NETWORK	1
NAME CHANGE	LB10NT
INPUT PASSWD	OFF
AMEND PASSWD	
WEB CONTROL	ON
DEFAULT	
⏏ SELECT <b>ENTER</b> ENTER <b>MENU</b> RETRN	

## NETWORK

Select the network setting you want to use.

### NAME CHANGE

The name for this projector can be set.

## INPUT PASSWD

Set to "ON" if you want password confirmation to be used when controlling the projector with a personal computer by means of the wireless network.

## AMEND PASSWD

Passwords can be changed.

## WEB CONTROL

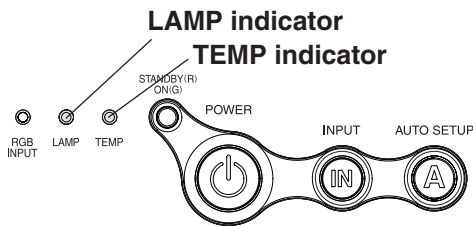
To control the projector with a personal computer by means of the wireless network, set the "WEB CONTROL" to "ON".

## DEFAULT

Network settings can be returned to the factory default settings.

# When the TEMP indicator and the LAMP indicator are illuminated

There are two indicators on the control panel of the projector which give information about the operating condition of the projector. These indicators illuminate or flash to warn you about problems that have occurred inside the projector, so if you notice that one of the indicators is on, turn off the power and check the table below for the cause of the problem.



TEMP indicator		
Indicator display	Illuminated (red) (Lamp unit on)	Flashing (red) (Lamp unit off)
Problem	The surrounding temperature or the temperature inside the projector has become unusually high.	The surrounding temperature or the temperature inside the projector has become dangerously high, causing the lamp unit to automatically shut off.
Possible cause	<ul style="list-style-type: none"><li>• The ventilation holes may be covered.</li><li>• The ambient temperature in the place of use may be too high.</li><li>• The air filter may be blocked.</li></ul>	
Remedy	<ul style="list-style-type: none"><li>• Uncover the ventilation holes.</li><li>• Set up the projector in a place where the temperature is between 0 °C (32 °F) and 40 °C (104 °F) and the humidity is between 20% and 80% (with no condensation). [If you set the “FAN CONTROL” to “HIGH” (page 45), set up the projector in a place where the temperature is between 0 °C (32 °F) and 35 °C (95 °F) and the humidity is between 20% and 80% (with no condensation).]</li><li>• Disconnect the power cord by following the procedure on page 26, and then clean the air filter. (Refer to page 52)</li></ul>	

LAMP indicator			
Indicator display	Illuminated (red)	Flashing (red)	
Problem	It is nearly time to replace the lamp unit.	An abnormality has been detected in the lamp circuit.	
Possible cause	<ul style="list-style-type: none"> <li>Does “REPLACE LAMP” appear on the screen after the projector is turned on?</li> </ul>	<ul style="list-style-type: none"> <li>The power may have been turned on straight away after it was turned off.</li> </ul>	<ul style="list-style-type: none"> <li>There may be an abnormality in the lamp circuit.</li> </ul>
Remedy	<ul style="list-style-type: none"> <li>This occurs when the operation time for the lamp unit is nearing 1 800 hours (when “LAMP POWER” has been set to “HIGH”). Ask your dealer or an Authorized Service Center to replace the lamp unit.</li> </ul>	<ul style="list-style-type: none"> <li>Wait for a while until the lamp unit cools down before turning the power back on again.</li> </ul>	<ul style="list-style-type: none"> <li>Disconnect the power cord by following the procedure on page 26, and then contact an Authorized Service Center.</li> </ul>

**NOTE:**

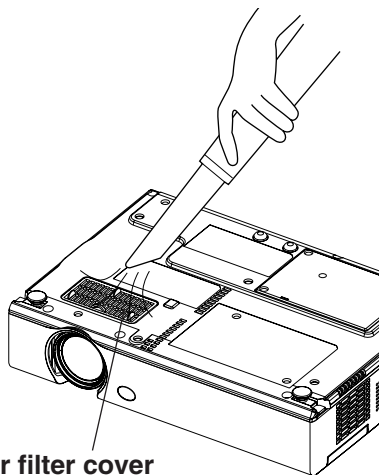
- Be sure to disconnect the power cord by following the procedure given in “Turning off the power” on page 26 before carrying out any of the procedures in the “Remedy” column.
- If the power turns off after the TEMP indicator has illuminated, it means an abnormality has occurred. Please contact an Authorized Service Center so that the necessary repairs can be made.

# Cleaning and replacing the air filter

If the air filter becomes clogged with dust, the internal temperature of the projector will rise, the TEMP indicator will illuminate and the projector's power will turn off (the TEMP indicator will flash after the power is turned off). **The air filter should be cleaned every 100 hours of use.**

## Cleaning

**Use a vacuum cleaner to clean off any accumulated dust.**



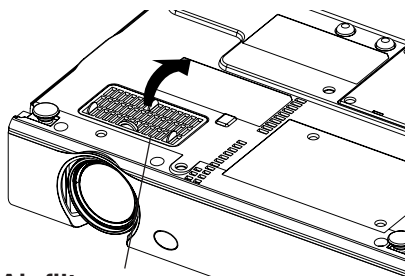
Air filter cover

### NOTE:

- If the dust cannot be cleaned by a vacuum cleaner, remove the air filter and soak it in water, and then wash out the dust by hand. Be sure to install the air filter after it has dried.
- Do not use detergent when washing the air filter.
- If the dust cannot be removed by cleaning, it is time to replace the air filter. Please consult your dealer. Furthermore, if the lamp unit is being replaced, replace the air filter at this time also.

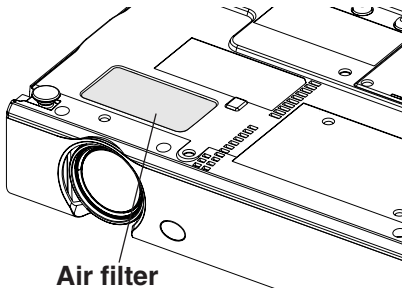
## Replacement procedure

- ① **Turn off the power and disconnect the power cord.**  
Be sure to disconnect the power cord by following the procedure given on page 26.
- ② **Gently turn the projector upside down, and then remove the air filter cover.**



Air filter cover

- ③ **Replace the air filter, and then install the air filter cover.**



Air filter

### NOTE:

- Be sure to install the air filter before using the projector. If the projector is used without the air filter installed, dust and other foreign particles will be drawn into the projector, and malfunctions will result.

# Replacing the lamp unit

## Warning

The lamp unit should only be replaced by a qualified technician.

When replacing the lamp, allow it to cool for at least one hour before handling it.

- The lamp cover gets very hot, and contact with it can cause burns.

## Notes on replacing the lamp unit

- The light generating lamp is made of glass, so dropping it or allowing it to hit hard objects may cause it to burst. Be careful when handling the lamp.
- Dispose of the removed old lamp with the same care that would be taken with a fluorescent light.
- A Phillips screwdriver is necessary for removing the lamp unit.

### NOTE:

- The projector is not supplied with a replacement lamp unit. Please ask your dealer for details. Lamp unit product no.: **ET-LAB10**

### CAUTION:

- Do not use any lamp unit other than the one with the product number indicated above.

## Lamp unit replacement period



The lamp is a consumable product. Even when the full life of the bulb has not been exhausted, the brightness of the light will gradually decline. Therefore periodic replacement of the lamp is necessary.

The intended lamp replacement interval is 2 000 hours, but it is possible that the lamp may need to be replaced earlier due to variables such as a particular lamp's characteristics, usage conditions and the installation environment. Early preparation for lamp replacement is encouraged.

The lamp will automatically shut off after approximately 10 minutes when 2 000 hours of use have been reached because of a much greater chance of it exploding after this time.

### NOTE:

- The usage hours explained above are for when "LAMP POWER" in the "OPTION2" menu has been set to "HIGH" and when "AI" in the "PICTURE" menu has been set to "OFF". If "LAMP POWER" is set to "LOW", or "AI" is set to "ON", the life of the lamp can be extended.
- While 2 000 hours is the intended replacement interval, it is not a period of time covered by warranty.

	On-screen display 	LAMP indicator 
More than 1 800 hours	Displayed for 30 seconds. Pressing any button will clear the display.	Illuminates red during image projection and standby mode.
More than 2 000 hours	Remains displayed until any button is pressed.	

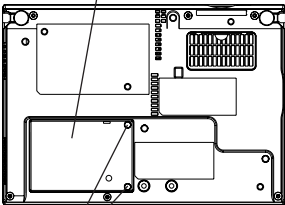
## Lamp unit replacement procedure

### NOTE:

- If the lamp usage time has passed 2 000 hours (when “LAMP POWER” has been set to “HIGH” and when “AI” has been set to “OFF”), the projector will switch to standby mode after approximately 10 minutes of operation. The steps ⑦ to ⑪ on the next page should thus be completed within 10 minutes.

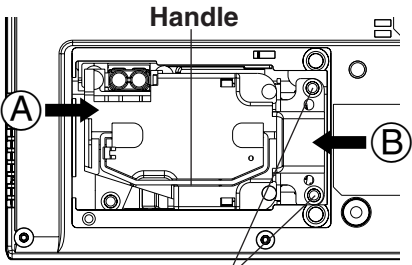
- ① **Disconnect the power cord from the projector by following the procedure on page 26, and check that the area around the lamp unit has cooled down.**
- ② **Use a Phillips screwdriver to turn the lamp unit cover fixing screws at the bottom of the projector, and then remove the lamp unit cover.**

Lamp unit cover



Lamp unit cover fixing screws

- ③ **Use a Phillips screwdriver to loosen the two lamp unit fixing screws until the screws turn freely. Then hold the handle of the lamp unit and gently pull it out from the projector.**



Lamp unit fixing screws

- ④ **Insert the new lamp unit while making sure that the direction of insertion is correct, and then use a Phillips screwdriver to securely tighten the lamp unit fixing screws.**

When inserting the new lamp unit, be sure to push it in at the point (A) and (B).

- ⑤ Install the lamp unit cover, and then use a Phillips screwdriver to securely tighten the lamp unit cover fixing screws.

**NOTE:**

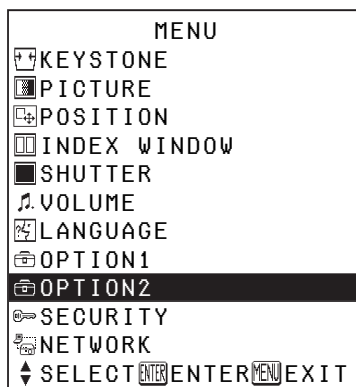
- Be sure to install the lamp unit and the lamp unit cover securely. If they are not securely installed, it may cause the protection circuit to operate so that the power cannot be turned on.

- ⑥ Connect the power cord.
- ⑦ Press the **POWER** button so that a picture is projected onto the screen.

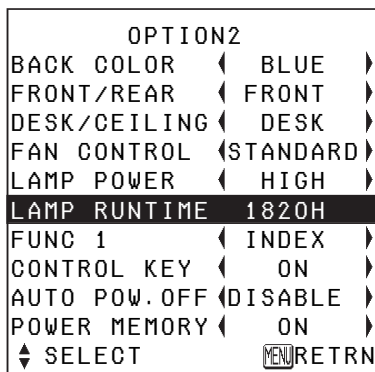
**NOTE:**

- If the power cord was disconnected during projection when the projector was used the last time, projection will start after the power cord is connected (when “POWER MEMORY” in the “OPTION2” menu is set to “ON”). Refer to page 46 for details.

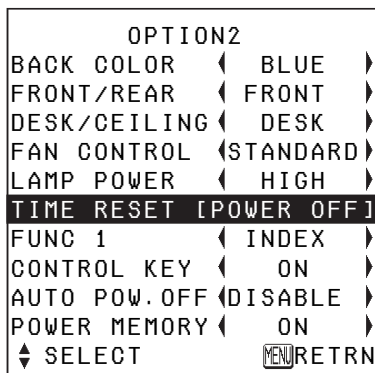
- ⑧ Press the **MENU** button to display the “MAIN MENU”, and then press the **▲** or **▼** button to select “OPTION2”.



- ⑨ Press the **ENTER** button to display the “OPTION2” menu, and then press the **▲** or **▼** button to select “LAMP RUNTIME”.



- ⑩ Press and hold the **ENTER** button for approximately 3 seconds.



The “LAMP RUNTIME” will change to “TIME RESET [POWER OFF]”.

**NOTE:**

- If the **MENU** button is pressed, the lamp time resetting screen will be cancelled.

- ⑪ Turn off the power.

This will reset the cumulative usage time for the lamp unit to “0”. Refer to page 26 for details on how to turn off the power.



# Before calling for service

Before calling for service, check the following points.

Problem	Possible cause	Page
<b>Power does not turn on.</b>	● The power cord may not be connected.	—
	● The main power supply is not being supplied to the wall outlet.	—
	● TEMP indicator is illuminated or flashing.	50
	● LAMP indicator is illuminated or flashing.	51
	● The lamp unit cover has not been securely installed.	—
<b>No picture appears.</b>	● The video signal input source may not be connected properly.	—
	● The input selection setting may not be correct.	25
	● The “BRIGHT” adjustment setting may be at the minimum possible setting.	38
	● The “SHUTTER” function may be in use.	29
<b>The picture is fuzzy.</b>	● The lens cover may still be attached to the lens.	—
	● The lens focus may not have been set correctly.	25
	● The projector may not be at the correct distance from the screen.	20
	● The lens may be dirty.	—
	● The projector may be tilted too much.	20
<b>The color is pale or grayish.</b>	● “COLOR” or “TINT” adjustment may be incorrect.	38
	● The input source which is connected to the projector may not be adjusted correctly.	—
<b>No sound can be heard.</b>	● The audio signal source may not be connected properly.	—
	● The volume adjustment may be at the lowest possible setting.	30, 33
<b>The remote control unit does not operate.</b>	● The battery may be weak.	—
	● The battery may not be inserted correctly.	23
	● The remote control signal receptor on the projector may be obstructed.	23
	● The remote control unit may be out of the operation range.	23
<b>The buttons on the projector do not function.</b>	● The “CONTROL KEY” may be set to “OFF”. In order to set the “CONTROL KEY” to “ON” without using the remote control unit, keep holding down the ENTER button on the projector and press the MENU button for more than 2 seconds.	46

Problem	Possible cause	Page
The picture does not display correctly.	● The signal format ("TV-SYSTEM") may not be set correctly.	39
	● There may be a problem with the video tape or other signal source.	—
	● A signal which is not compatible with the projector may be being input.	60
Picture from computer does not appear.	● The cable may be too long.	—
	● The external video output for the laptop computer may not be set correctly. (You may be able to change the external output settings by pressing the [Fn]+[F3] or [Fn]+[F10] keys simultaneously. The actual method varies depending on the type of computer, so refer to the documentation provided with your computer for further details.) ● If an RGB INPUT indicator is turned off, the video signals may not be output from the computer.	16

## Cleaning and maintenance

**Before carrying out cleaning and maintenance, be sure to disconnect the power cord plug from the wall outlet.**

**Wipe the cabinet with a soft, dry cloth.**

If the cabinet is particularly dirty, soak the cloth in water with a small amount of neutral detergent in it, squeeze the cloth very well, and then wipe the cabinet. After cleaning, wipe the cabinet dry with a dry cloth. If using a chemically-treated cloth, read the instructions supplied with the cloth before use.

**Do not wipe the lens with a cloth that is dusty or which produces lint.**

If any dust or lint gets onto the lens, such dust or lint will be magnified and projected onto the screen. Use a blower to clean any dust and lint from the lens surface, or use a soft cloth to wipe off any dust or lint.

# Specifications

Power supply:	100 V - 240 V ~, 50 Hz/60 Hz
Power consumption:	220 W [During standby (when fan is stopped): Approx. 6 W]
Amps:	2.5 A - 1.0 A

LCD panel:	
Panel size (diagonal):	0.7 type (17.78 mm)
Aspect ratio:	4:3
Micro lens array:	Available
Display method:	3 transparent LCD panels (RGB)
Drive method:	Active matrix method
Pixels:	
PT-LB10NTU/PT-LB10U/PT-LB10VU:	786 432 (1 024 x 768) x 3 panels
PT-LB10SU:	480 000 (800 x 600) x 3 panels

Lens:	Manual zoom (1 - 1.2) / Manual focus
PT-LB10NTU/PT-LB10U/PT-LB10SU:	F 1.7 - 1.9, f 21.5 mm - 25.8 mm
PT-LB10VU:	F 2.0 - 2.3, f 22.0 mm - 26.2 mm

Lamp:	UHM lamp (155 W)
-------	------------------

Luminosity:	
PT-LB10NTU/PT-LB10U/PT-LB10SU:	2 000 lm
PT-LB10VU:	1 600 lm

Scanning frequency (for RGB signals):	
Horizontal scanning frequency:	15 kHz - 91 kHz
Vertical scanning frequency:	50 Hz - 85 Hz
Dot clock frequency:	Less than 100 MHz

YPbPr signals:	480i, 576i, 480p, 576p, 1 080/60i, 1 080/50i, 720/60p
----------------	---

Color system:	7 (NTSC/NTSC 4.43/PAL/PAL-M/PAL-N/PAL60/SECAM)
---------------	--

Projection size:	838.2 mm - 7 620 mm (33" - 300")
------------------	----------------------------------

Throw distance:	
PT-LB10NTU/PT-LB10U/PT-LB10SU:	1.1 m - 10.7 m (3'7" - 35'1")
PT-LB10VU:	1.1 m - 11.0 m (3'7" - 36'1")

Optical axis shift:	6:1 (fixed)
---------------------	-------------

Screen aspect ratio:	4:3
----------------------	-----

Installation:	Front/Rear/Ceiling/Desk (menu selection)
---------------	--

Speaker:	4 cm x 3 cm oval x 1
----------	----------------------

Max. useable volume output:	1 W (mono)
-----------------------------	------------

## Connectors

RGB IN/OUT:	Dual line, one for input and one for output. D-sub HD 15-pin (female)
-------------	--

During YPbPr input/output:

Y:	1.0 V [p-p] (Including sync), 75 Ω
PB, PR :	0.7 V [p-p], 75 Ω

During RGB input/output:	
R.G.B.:	0.7 V [p-p], 75 Ω
G.SYNC:	1.0 V [p-p], 75 Ω
HD/SYNC:	TTL, automatic positive/negative polarity compatible
VD:	TTL, automatic positive/negative polarity compatible
VIDEO IN:	Single-line, RCA pin jack 1.0 V [p-p], 75 Ω
S-VIDEO IN:	Single-line, Mini DIN 4-pin Y 1.0 V [p-p], C 0.286 V [p-p], 75 Ω
AUDIO IN:	Single-line, RCA pin jack x 2 (L-R) 0.5 V [rms]
SERIAL:	DIN 8-pin RS-232C compatible
Cabinet:	Moulded plastic (PC/ABS)
Dimensions:	
Width:	297 mm (11-11/16")
Height:	73 mm (2-27/32")
Length:	210 mm (8-1/4")
Weight:	
PT-LB10NTU:	2.2 kg (4.9 lbs.)
PT-LB10U/PT-LB10VU/PT-LB10SU:	2.1 kg (4.6 lbs.)
Operating environment:	
Temperature:	0 °C - 40 °C (32 °F - 104 °F) [When the "FAN CONTROL" is set to "HIGH" (page 45): 0 °C - 35 °C (32 °F - 95 °F)]
Humidity:	20% - 80% (no condensation)
Certifications:	UL60950, C-UL FCC Class B
<b>&lt;Remote control unit&gt;</b>	
Power supply:	3 V DC (Lithium CR2025 battery x1)
Operating range:	Approx. 7 m (23') (when operated directly in front of signal receptor)
Weight:	18 g (0.6 ozs.) (including battery)
Dimensions:	
Width:	40 mm (1-9/16")
Length:	6.5 mm (-1/4")
Height:	86 mm (3-3/8")
<b>&lt;Options&gt;</b>	
Ceiling bracket	ET-PKC80
Wireless remote control unit	ET-RM300
Serial adapter (DIN 8-pin/D-sub 9-pin)	ET-ADSER
Wireless card	ET-CDWL3U/ET-CDWL2U

# Appendix

## List of compatible signals

Mode	Display resolution (dots)*1	Scanning frequency		Dot clock frequency (MHz)	Picture quality*2		Resizing*3		Format
		H (kHz)	V (Hz)		LB10NTU LB10U LB10VU	LB10SU	LB10NTU LB10U LB10VU	LB10SU	
NTSC/NTSC4.43/ PAL-M/PAL60	720 x 480i	15.7	59.9		A	A	OK	OK	Video/S-Video
PAL/PAL-N/SECAM	720 x 576i	15.6	50.0		A	A	OK	OK	Video/S-Video
480i	720 x 480i	15.7	59.9	13.5	A	A	OK	OK	YPbPr/RGB
576i	720 x 576i	15.6	50.0	13.5	A	A	OK	OK	YPbPr/RGB
480p	720 x 483	31.5	59.9	27.0	A	A	OK	OK	YPbPr/RGB
576p	720 x 576	31.3	50.0	27.0	A	A	OK	OK	YPbPr/RGB
1 080/60i	1 920 x 1 080i	33.8	60.0	74.3	A	A			YPbPr/RGB
1 080/50i	1 920 x 1 080i	28.1	50.0	74.3	A	A			YPbPr/RGB
720/60p	1 280 x 720	45.0	60.0	74.3	A	A			YPbPr/RGB
VGA400	640 x 400	31.5	70.1	25.2	A	A	OK	OK	RGB
	640 x 400	37.9	85.1	31.5	A	A	OK	OK	RGB
VGA480 *4	640 x 480	31.5	59.9	25.2	A	A	OK	OK	RGB
	640 x 480	35.0	66.7	30.2	A	A	OK	OK	RGB
	640 x 480	37.9	72.8	31.5	A	A	OK	OK	RGB
	640 x 480	37.5	75.0	31.5	A	A	OK	OK	RGB
	640 x 480	43.3	85.0	36.0	A	A	OK	OK	RGB
SVGA	800 x 600	35.2	56.3	36.0	A	AA	OK		RGB
	800 x 600	37.9	60.3	40.0	A	AA	OK		RGB
	800 x 600	48.1	72.2	50.0	A	AA	OK		RGB
	800 x 600	46.9	75.0	49.5	A	AA	OK		RGB
	800 x 600	53.7	85.1	56.3	A	AA	OK		RGB
MAC16	832 x 624	49.7	74.6	57.3	A	A	OK		RGB
XGA *4	1 024 x 768	48.4	60.0	65.0	AA	A			RGB
	1 024 x 768	56.5	70.1	75.0	AA	A			RGB
	1 024 x 768	60.0	75.0	78.8	AA	A			RGB
	1 024 x 768	68.7	85.0	94.5	AA	A			RGB
	1 024 x 768i	35.5	87.0	44.9	AA	A			RGB
MXGA	1 152 x 864	64.0	71.2	94.2	A	A			RGB
	1 152 x 864	67.5	74.9	108.0	B	B			RGB
	1 152 x 864	76.7	85.0	121.5	B	B			RGB
MAC21	1 152 x 870	68.7	75.1	100.0	B	B			RGB
MSXGA	1 280 x 960	60.0	60.0	108.0	B	B			RGB
SXGA *4	1 280 x 1 024	64.0	60.0	108.0	B	B			RGB
	1 280 x 1 024	80.0	75.0	135.0	B	B			RGB
	1 280 x 1 024	91.1	85.0	157.5	B	B			RGB
	1 400 x 1 050	64.0	60.0	108.0	B	B			RGB
UXGA *4	1 600 x 1 200	75.0	60.0	162.0	B	B			RGB

\*1 The “i” appearing after the resolution indicates an interlaced signal.

\*2 The following symbols are used to indicate picture quality.

AA Maximum picture quality can be obtained.

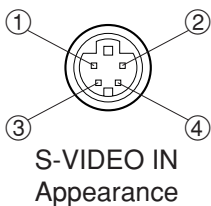
A Signals are converted by the image processing circuit before picture is projected.

B Some loss of data occurs to make projection easier.

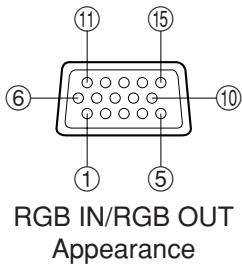
\*3 Signals with “OK” in the “Resizing” column can be set using the “RESIZING” command in the “POSITION” menu. (page 42)

\*4 Signals that are compatible with the “FRAME LOCK” function. (page 42)

# Pin assignments



Pin No.	Signal
①	Earth (Luminance signal)
②	Earth (Color signal)
③	Luminance signal
④	Color signal

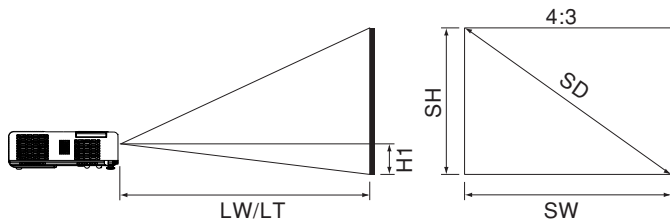


Pin No.	Signal
①	R/P <sub>R</sub>
②	G/G·SYNC/Y
③	B/P <sub>B</sub>
⑫	SDA
⑬	HD/SYNC
⑭	VD
⑮	SCL

Pin ④ and ⑨ are spare.  
Pins ⑤ -⑧, ⑩ and ⑪ are for earth.  
Pins ⑫ and ⑮ functions are only valid when supported by the computer.

## Projection dimensions calculation methods

If the screen size (diagonal) is SD (m), then the following formula is used to calculate the projection distance for the wide lens position (LW) and the projection distance for the telephoto lens position (LT).



PT-LB10NTU/PT-LB10U/PT-LB10SU	PT-LB10VU
$LW=0.030 \times SD / 0.0254 - 0.037$	$LW=0.031 \times SD / 0.0254 - 0.038$
$LT=0.036 \times SD / 0.0254 - 0.037$	$LT=0.037 \times SD / 0.0254 - 0.038$

For 16:9 aspect ratios, the following formula can be used to calculate the projection distance.

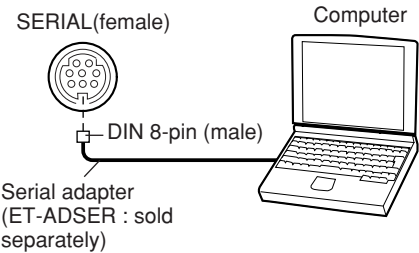
PT-LB10NTU/PT-LB10U/PT-LB10SU	PT-LB10VU
$LW=0.032 \times SD / 0.0254 - 0.037$	$LW=0.033 \times SD / 0.0254 - 0.038$
$LT=0.039 \times SD / 0.0254 - 0.037$	$LT=0.040 \times SD / 0.0254 - 0.038$

\*The values obtained from the formulas above are approximate.

# Using the SERIAL connector

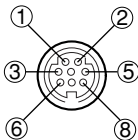
The serial connector which is on the connector panel of the projector conforms to the RS-232C interface specification, so that the projector can be controlled by a personal computer which is connected to this connector.

## Connection



You must use only RS-232C Serial Interface Cable with ferrite core, type ET-ADSER.

## Pin assignments and signal names



DIN 8-pin  
Appearance

Pin No.	Signal name	Contents
③	RXD	Received data
④	GND	Earth
⑤	TXD	Transmitted data
①		Connected internally
②		
⑥		
⑦		NC
⑧		NC

## Communications settings

Signal level	RS-232C
Sync. method	Asynchronous
Baud rate	9 600 bps
Parity	None
Character length	8 bits
Stop bit	1 bit
X parameter	None
S parameter	None

## Basic format

The data sent from the computer to the projector is transmitted in the format shown below.

STX	Command	:	Parameter	ETX
Start byte (02h)	3 bytes		1 byte 1 byte-5 bytes	End byte (03h)

### NOTE:

- The projector can not receive the command for 10 seconds after the lamp is switched on. Wait 10 seconds before sending the command.
- If sending multiple commands, check that a response has been received from the projector for one command before sending the next command.
- When a command which does not require parameters is sent, the colon (:) is not required.
- If an incorrect command is sent from the personal computer, the "ER401" command will be sent from the projector to the personal computer.

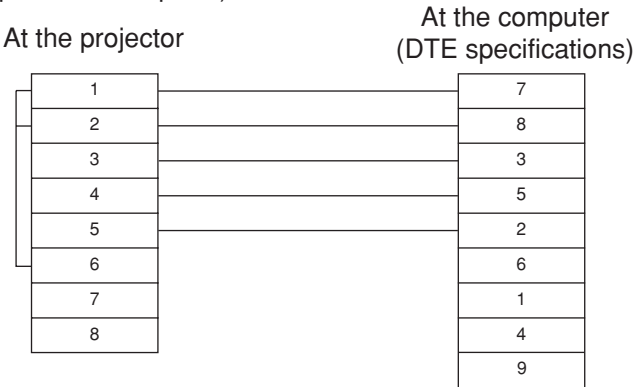
### Control commands

The commands which the personal computer can use to control the projector are shown in the following table.

Command	Control Contents	Remarks
PON	Power ON	In standby mode, all commands other than the PON command are ignored. <ul style="list-style-type: none"><li>• The PON command is ignored during lamp ON control.</li><li>• If a PON command is received while the cooling fan is operating after the lamp has switched off, the lamp is not turned back on again straight away, in order to protect the lamp.</li></ul>
POF	Power OFF	
AVL	Volume	Parameter 000-063 (Adjustment value 0-63)
IIS	Input signal selection	Parameter VID=VIDEO                      SVD=S-VIDEO RG1=RGB (YPbPr) NWP=NETWORK (PT-LB10NTU only)
Q\$\$	Lamp ON condition query	Callback 0 = Standby 1 = Lamp ON control active 2 = Lamp ON 3 = Lamp OFF control active

### Cable specifications

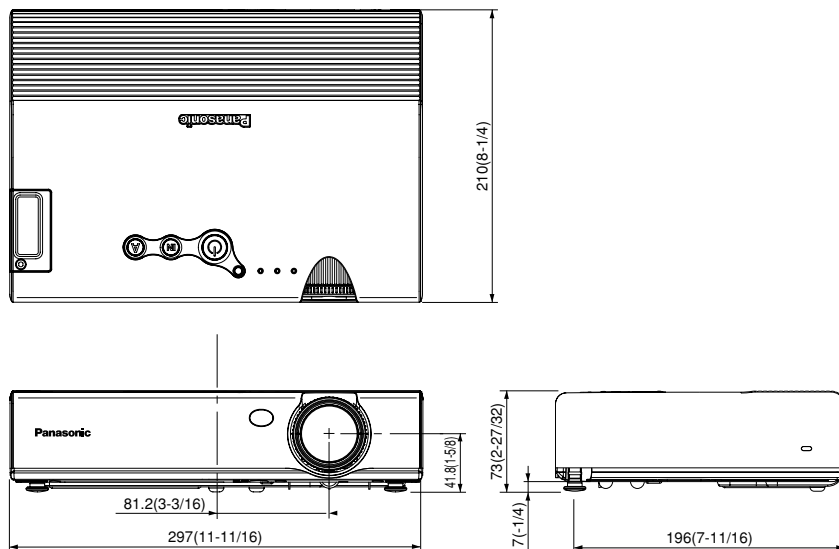
(When connected to a personal computer)





# Dimensions

<Units: mm (inch)>

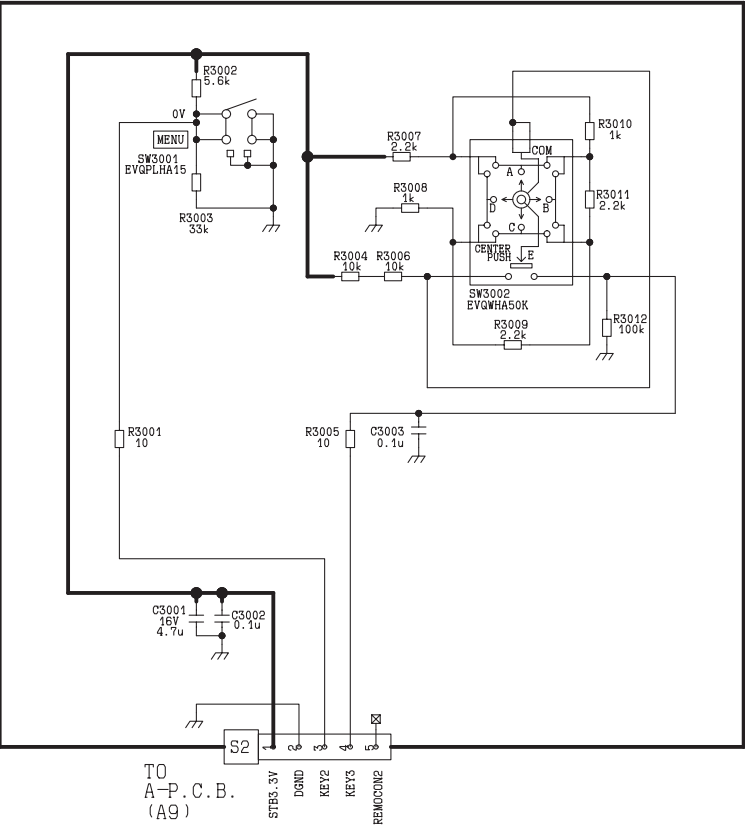
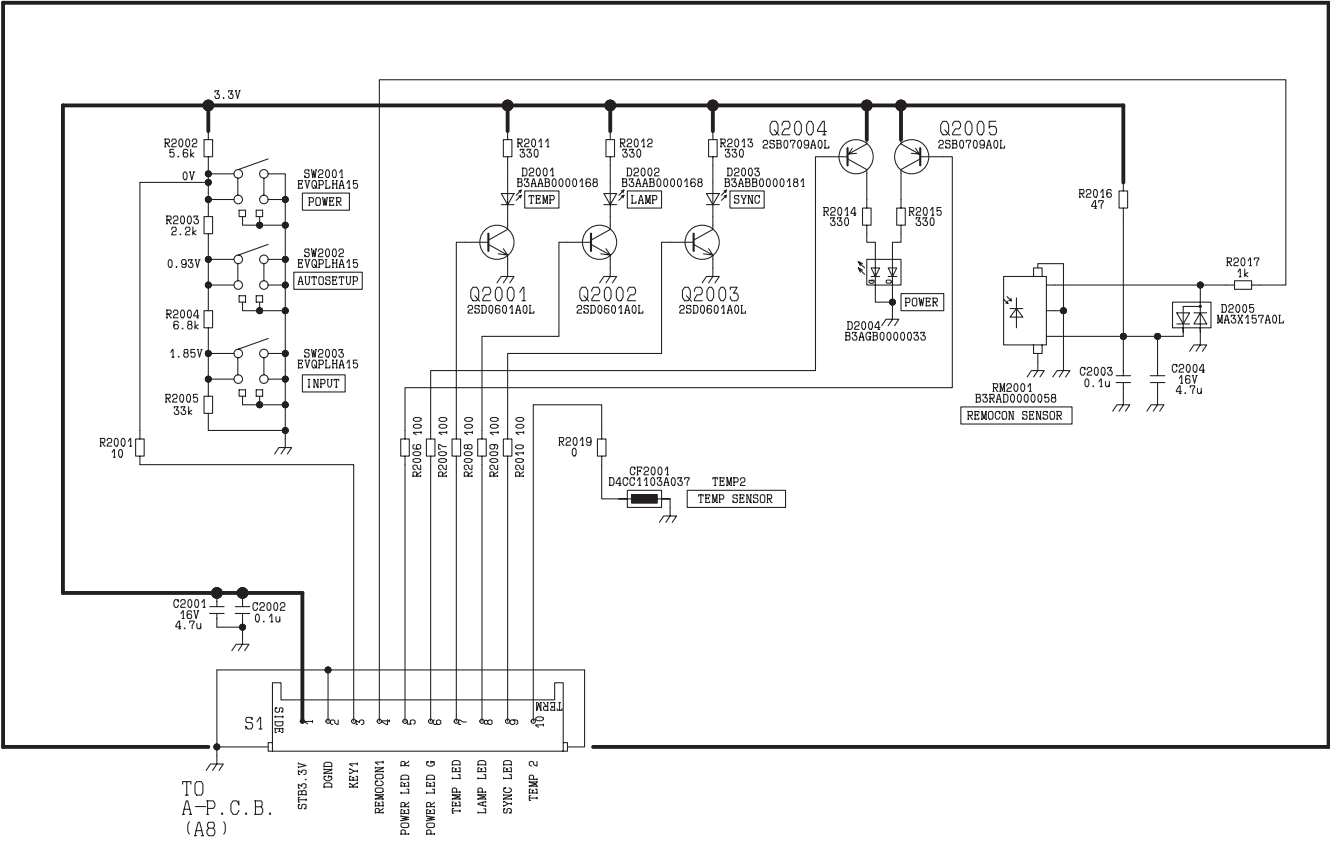


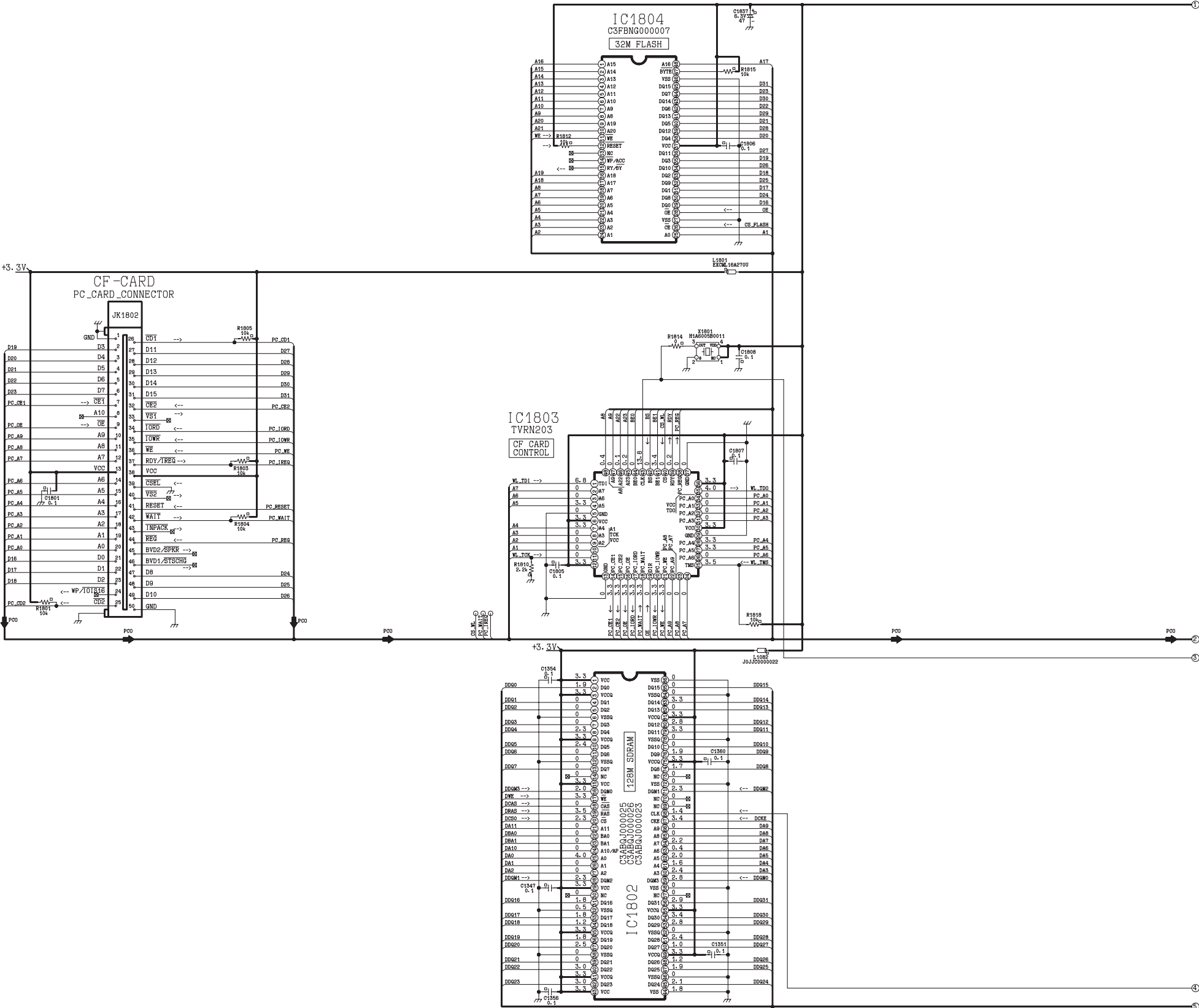
## Trademark acknowledgements

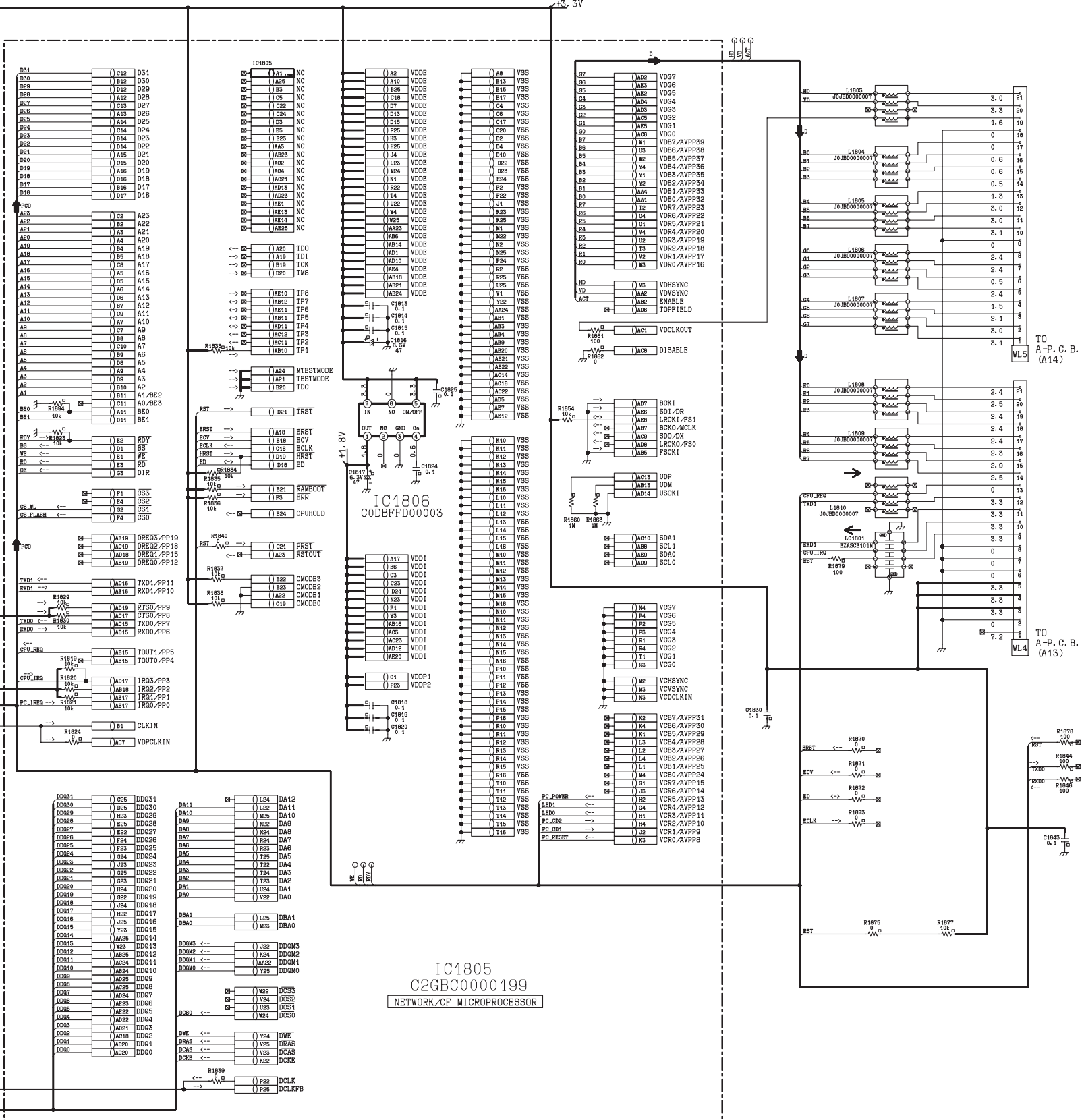
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- Macintosh is a registered trademark of Apple Computer, Inc.
- S-VGA is a registered trademark of the Video Electronics Standards Association.

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F

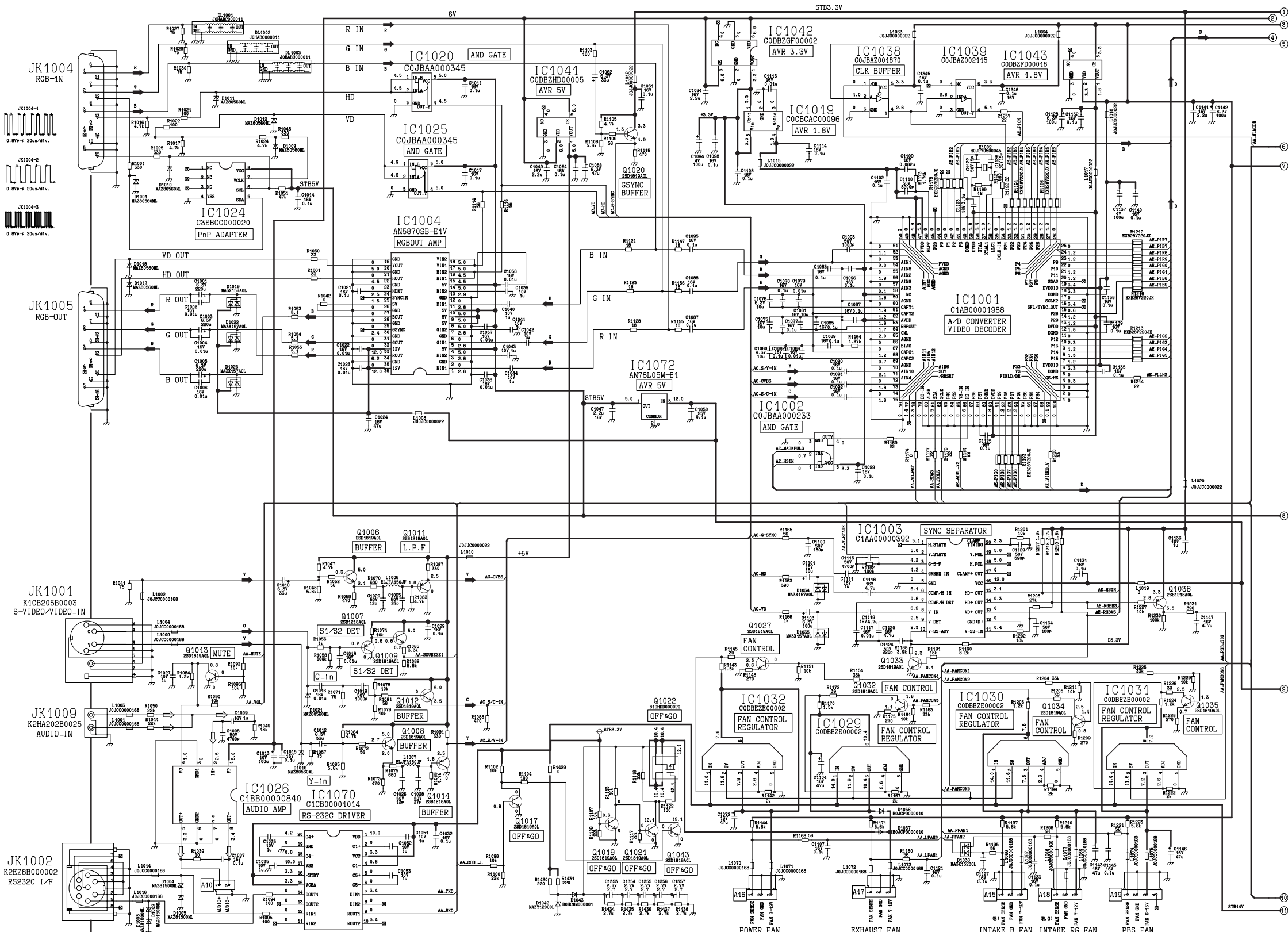
E

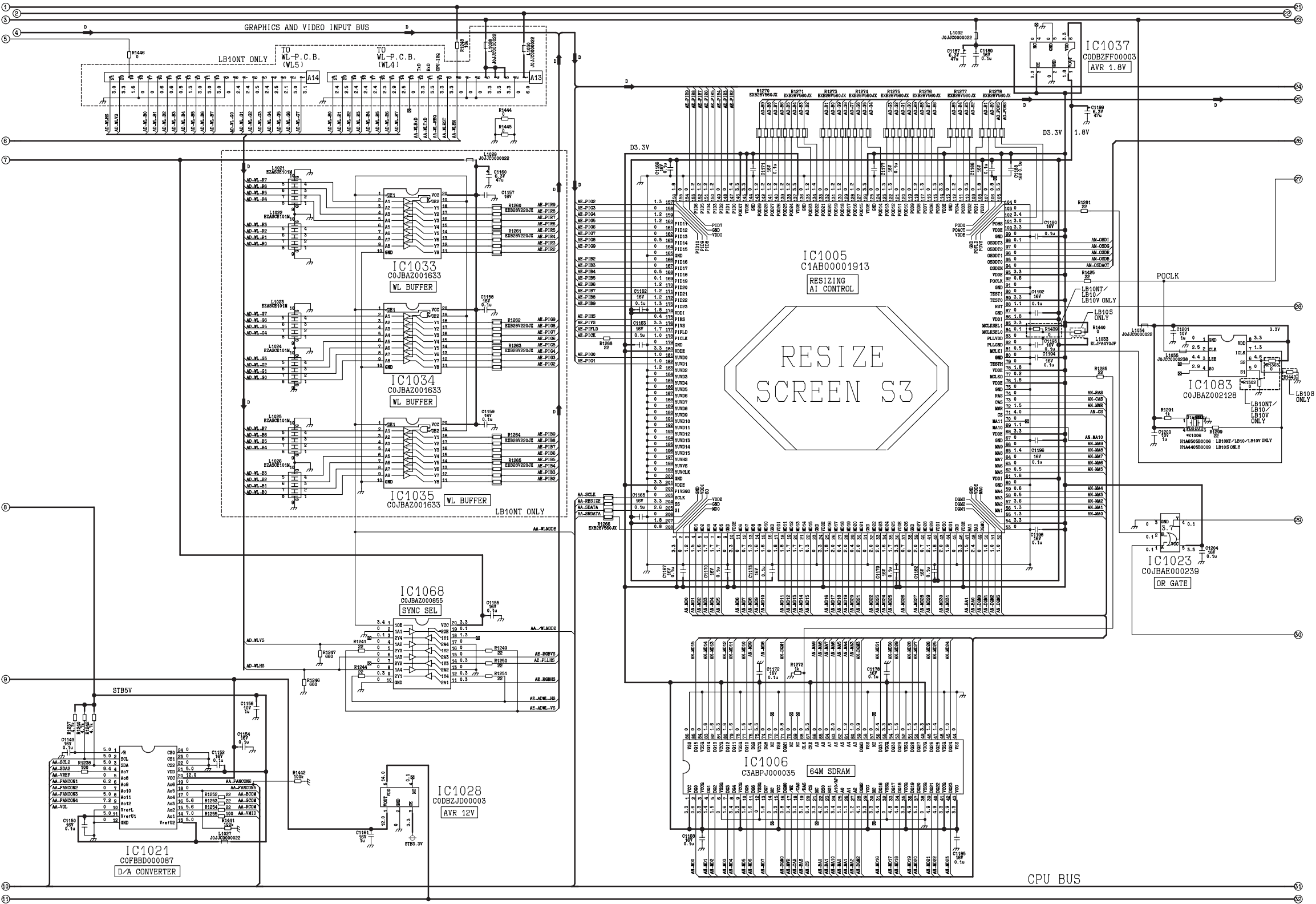
D

C

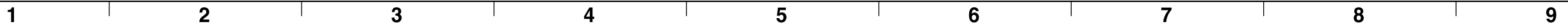
B

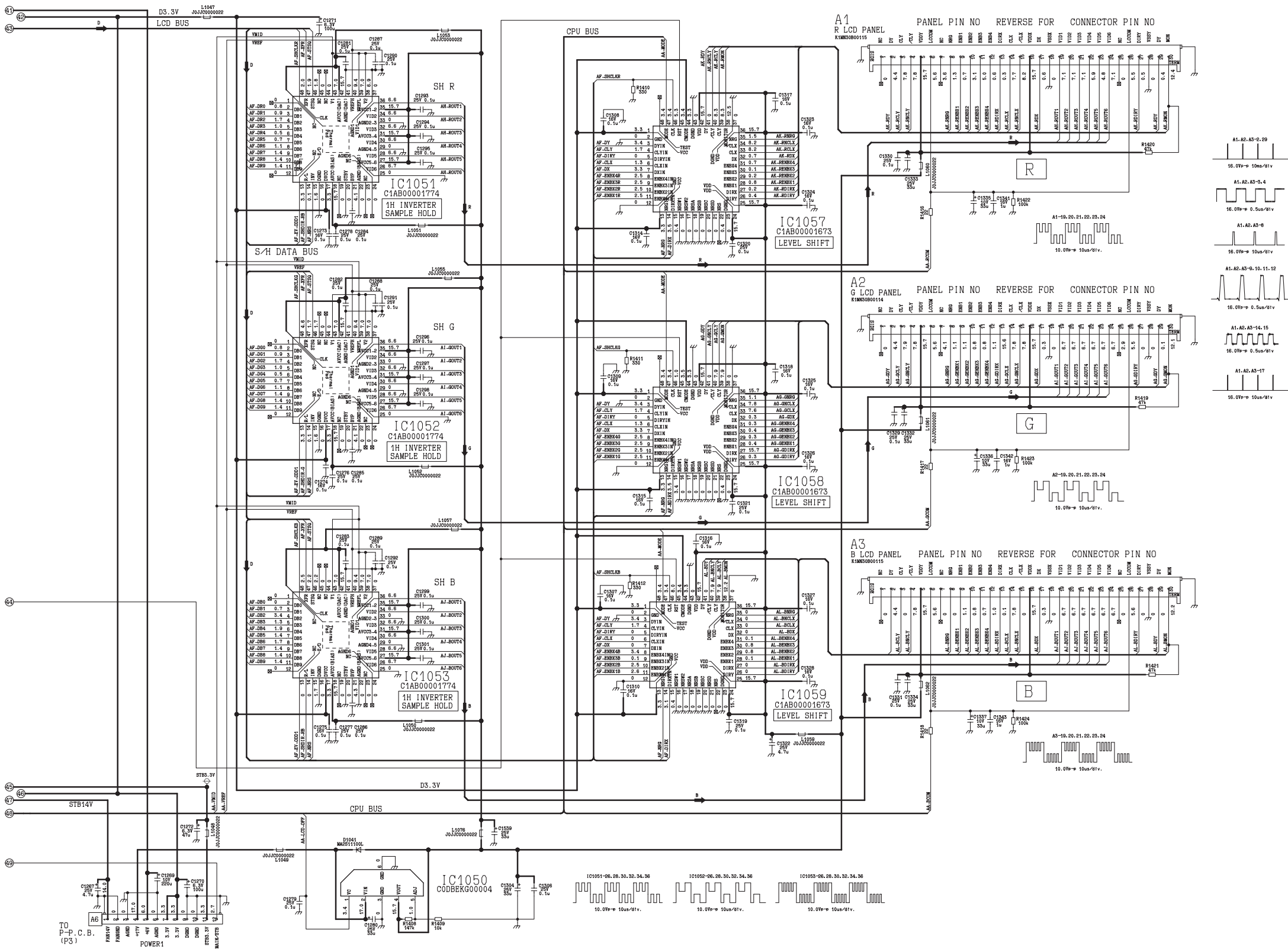
A











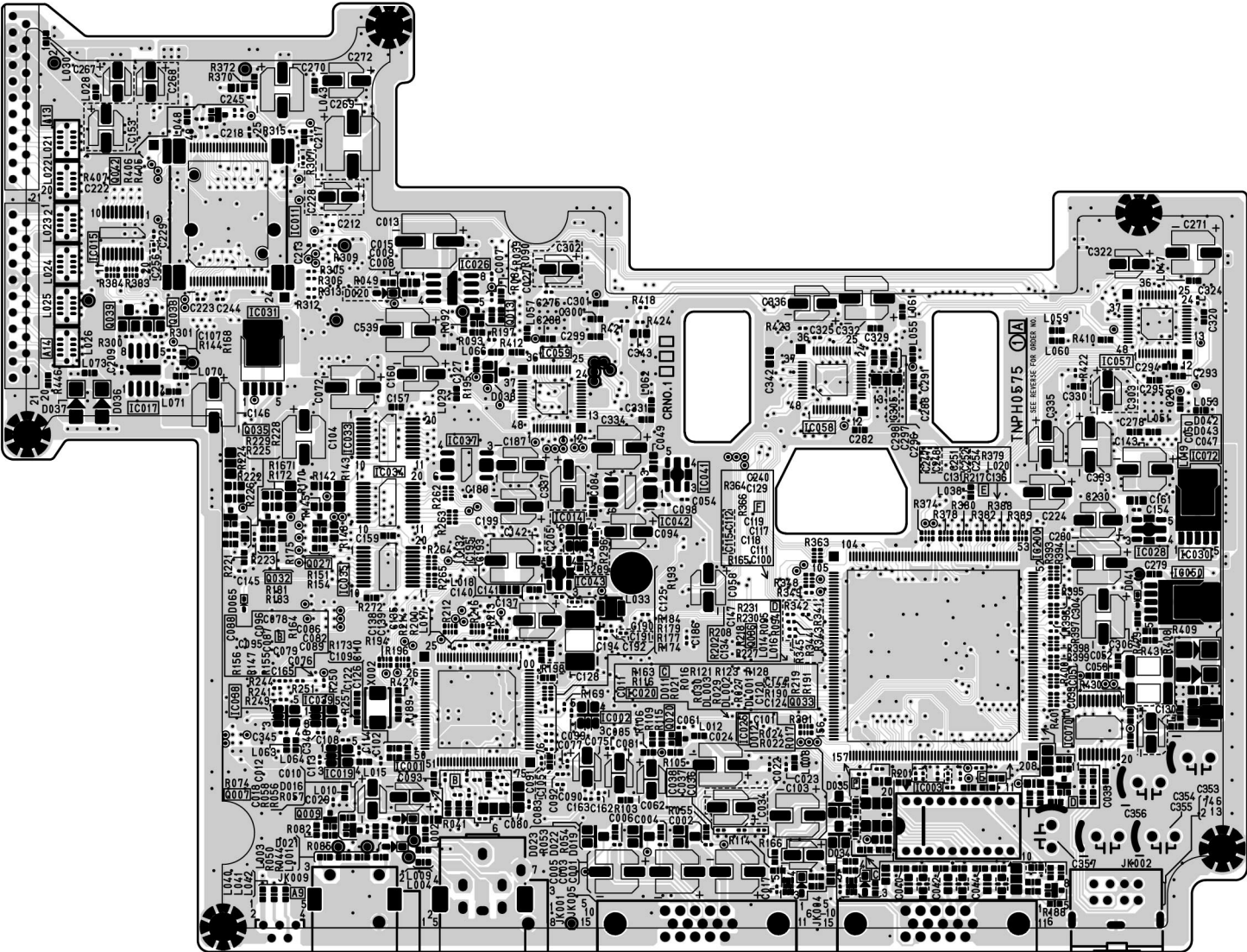


A-P.C.Board  
(Component Side)

TXANP01PVMZ (LB10NT\*)  
TXANP01PVNZ (LB10\*)  
TXANP01PVPZ (LB10V\*)  
TXANP01P000 (LB10S\*)

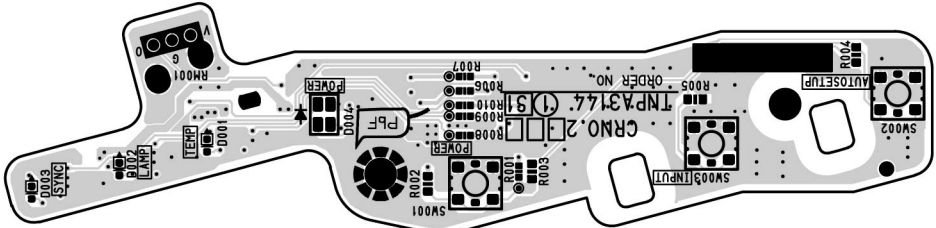
A-P.C.Board(Component Side)					
IC			TRANSISTOR		
IC1001	A-2	IC1034	B-2	Q1007	A-2
IC1002	B-3	IC1035	B-2	Q1009	A-2
IC1003	A-4	IC1037	C-2	Q1013	C-3
IC1011	C-2	IC1038	B-2	Q1020	B-3
IC1014	B-3	IC1039	B-2	Q1027	B-2
IC1015	C-1	IC1041	B-3	Q1032	B-2
IC1017	C-1	IC1042	B-3	Q1033	B-4
IC1019	A-2	IC1043	B-3	Q1035	C-2
IC1020	B-3	IC1050	B-5	Q1036	B-4
IC1025	B-3	IC1057	C-5	Q1038	C-1
IC1026	C-2	IC1058	C-4	Q1039	C-1
IC1028	B-5	IC1059	C-3	Q1042	D-1
IC1030	B-5	IC1070	A-5		
IC1031	C-2	IC1072	B-5		
IC1033	C-2	IC1200	B-4		

ADDRESS INFORMATION



S1-P.C.Board  
(File Side)

TNPA3144

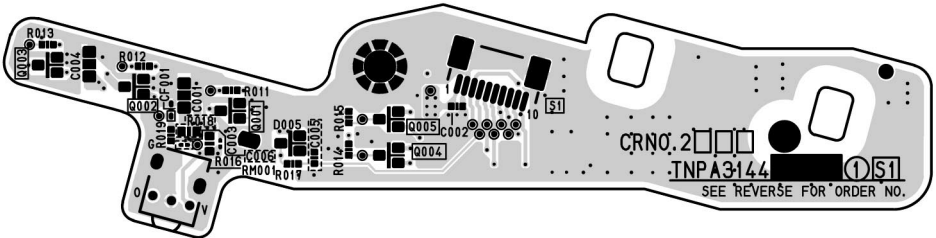


S1-P.C.Board  
(Component Side)

TNPA3144

S1-P.C.Board(Component Side)			
TRANSISTOR			
Q2001	B-7	Q2004	B-7
Q2002	B-6	Q2005	B-7
Q2003	B-6		

ADDRESS INFORMATION

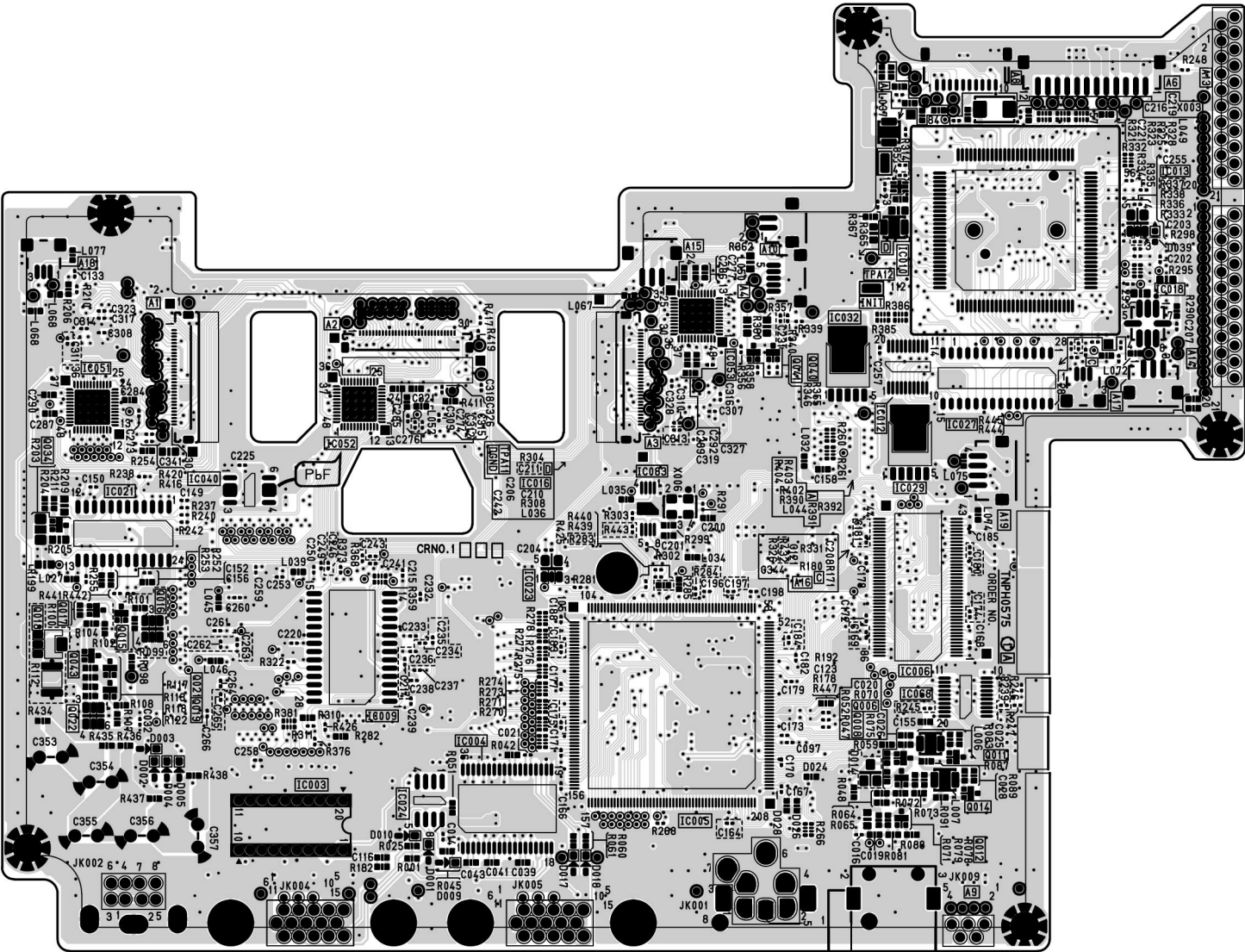


A-P.C.Board  
(Foil Side)

TXANP01PVMZ (LB10NT\*)  
TXANP01PVNZ (LB10\*)  
TXANP01PVPZ (LB10V\*)  
TXANP01P000 (LB10S\*)

A-P.C.Board(Foil Side)									
IC				TRANSISTOR				TP	
IC1003	A-2	IC1023	B-3	Q1006	B-4	Q1022	B-1	TPA11	C-3
IC1004	A-2	IC1024	A-2	Q1008	A-4	Q1034	B-1	TPA12	C-4
IC1005	B-3	IC1027	C-4	Q1011	A-4	Q1040	C-4		
IC1006	B-4	IC1029	B-4	Q1012	A-4	Q1041	C-4		
IC1009	B-2	IC1032	C-4	Q1014	A-4	Q1043	B-1		
IC1010	C-4	IC1040	B-2	Q1015	B-1				
IC1012	C-4	IC1051	C-1	Q1016	B-1				
IC1013	C-5	IC1052	C-2	Q1017	B-1				
IC1016	B-3	IC1053	C-3	Q1018	B-1				
IC1018	C-5	IC1068	B-4	Q1019	B-1				
IC1021	B-1	IC1083	B-3	Q1021	B-1				

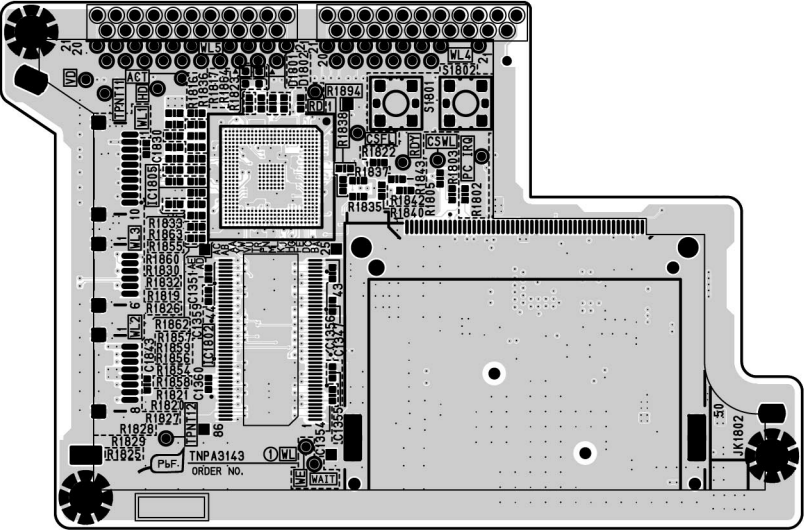
ADDRESS INFORMATION



WL-P.C.Board      TNPA3143 (LB10NT\*)  
(File Side)

WL-P.C.Board(Foil Side)			
IC		TP	
IC1802	D-7	TPA11	E-7
IC1805	E-7	TPA12	D-7

ADDRESS INFORMATION



WL-P.C.Board      TNPA3143 (LB10NT\*)  
(Component Side)

WL-P.C.Board(Component Side)			
IC			
IC1803	B-8	IC1806	A-7
IC1804	B-8		

ADDRESS INFORMATION

